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THE COST OF THE BRIGHT RED STRAWBERRY: THE DANGEROUS FAILURE OF PESTICIDE REGULATIONS TO ACCOUNT FOR CHILD FARMWORKERS

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COMMENT

THE COST OF THE BRIGHT RED
STRAWBERRY: THE DANGEROUS
FAILURE OF PESTICIDE
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CHILD FARMWORKERS

“I worked with a lot of older people and younger. The ages were always varied, eleven and twelve year olds, even ten year olds. They didn’t get paid on check [on the books], they’d just go and help their parents on the side. The growers know that. They see that – they would pass by when they drop off water. No one was going to say anything.

There was always white residue in the fields, especially zucchini always had residue on them. . . . [T]here were people who got sick but probably thought it was the heat. They never told us they were spraying, they would just say “watering.”

One summer . . . me and my older sister were working We were told when we saw the plane we had to get out. But they didn’t say when, just “look for the plane.” They were spraying things we didn’t know what they were. We heard it was chemicals so [the plants] could grow, but we didn’t know what they were. So we didn’t think about that when we saw a plane. We were in the next field and you see it all the time in the country. It’s always the next field but it drifts.”

Maria M., began working in fields at age eleven.¹

¹ ZAMA COURSEN-NEFF, HUMAN RIGHTS WATCH, FIELDS OF PERIL: CHILD LABOR IN US

I. INTRODUCTION

Agriculture is one of the United States' main industries, and children make up a significant portion of the agricultural workforce. Children as young as seven years old spend ten or more hours a day working in fields, often using knives, tractors, or other farm equipment.² These young children generally receive pay well below minimum wage and sometimes do not have access to drinking water or toilets. Many describe smelling or even being sprayed with pesticides.³ Although families' financial need often pushes children into farmwork, the long hours result in high drop-out rates from school that leave children with few options beyond farmwork and poverty once they reach adulthood.⁴ One mother whose eleven-year-old daughter worked hoeing cotton and caring for her younger brothers said, "I tell my daughter, 'I'm so sorry I stole your childhood from you.'"⁵ At the same time, exposure to dangerous chemical pesticides leads to lasting physical and mental health problems for these small children, including childhood cancer, acute poisonings, and respiratory distress.⁶

Farmers in the United States are becoming increasingly dependent on pesticides despite evidence that exposure to pesticides through food consumption or fieldwork is extremely harmful to humans.⁷ 1.2 billion pounds of pesticides are used in the United States annually and about seventy-six percent of these are used in the agriculture industry.⁸ Farmworkers are among the primary populations exposed to these pesticides, especially child farmworkers who perform physically demanding work mostly in vegetable crops.⁹ Meanwhile, farmworkers

AGRICULTURE 1, 2 (2010), available at www.hrw.org/en/reports/2010/05/05/fields-peril-0.

² See generally COURSEN-NEFF, *supra* note 1.

³ *Id.*

⁴ *Id.* at 5.

⁵ *Id.* at 23.

⁶ Brenda Eskenazi et al., *Exposures of Children to Organophosphate Pesticides and Their Potential Adverse Health Effects*, 107 ENVIRONMENTAL HEALTH PERSPECTIVES 409, 411 (1999).

⁷ *Myths About Pesticides*, PESTICIDE ACTION NETWORK, www.panna.org/science/myths (last visited Dec. 26, 2010) ("After 20 years of market stagnation, the pesticide industry entered a period of vigorous growth in 2004. The global pesticide market is approximately \$40 billion, and expected to grow at almost 3% per year, reaching \$52 billion by 2014."); Barbara Kennedy Kahn, Comment, *New Developments in Pesticide Regulation*, 13 TEMP. ENVTL. L. & TECH. J. 309 (1994) ("Pesticide use has increased by 250% since 1964.").

⁸ U.S. GOV'T ACCOUNTING OFFICE, GAO/RCED-00-40, PESTICIDES: IMPROVEMENTS NEEDED TO ENSURE THE SAFETY OF FARMWORKERS AND THEIR CHILDREN 5 (2000) [hereinafter GAO/RCED].

⁹ *Id.* at 24; see also U.S. GOV'T ACCOUNTING OFFICE, GAO/HEHS-98-193, CHILD LABOR IN AGRICULTURE: CHANGES NEEDED TO BETTER PROTECT HEALTH AND EDUCATIONAL

suffer more harm from pesticide exposure than any other sector of society, including both acute and long-term health effects.¹⁰ Infants and children are most susceptible to the effects of pesticide exposure that can permanently disrupt the development of their fragile brains and bodies.¹¹

Due to evidence that child farmworkers are suffering from short- and long-term health problems from working in fields,¹² the United States government's failure to provide protection for the thousands of children who work in fields each year is a serious problem. U.S. labor laws allow children to work in agriculture at ages much younger than any other industry,¹³ providing a legitimate choice for parents and children who live in poverty. From an environmental justice standpoint, the disparity between child labor laws in agriculture compared to every other industry is problematic since eighty-three percent of farmworkers are Hispanic and most live below the federal poverty line.¹⁴ Many farmworkers do not have the financial or political power to assert their rights or change jobs; less experienced children have even fewer options, especially since employment in other sectors may be illegal.¹⁵

From a national and international standpoint, the failure to protect child farmworkers is even more alarming. The international community has recognized the dangers that farmwork and pesticides pose to children and adopted two treaties to keep young children out of fields.¹⁶ Labor laws allowing young children to work long hours in fields surrounded by pesticides, however, mean that the United States is not in compliance with these international laws.¹⁷ The Environmental Protection Agency (EPA) has even acknowledged the dangers that pesticides pose to children, both by urging Congress to pass a bill that protects children from pesticide residue on food¹⁸ and issuing a policy paper that

OPPORTUNITIES 24 (1998) [hereinafter GAO/HEHS].

¹⁰ *Farmworkers*, PESTICIDE ACTION NETWORK, www.panna.org/issues/frontline-communities/farmworkers (last visited Mar. 24, 2011).

¹¹ *Children*, PESTICIDE ACTION NETWORK, www.panna.org/your-health/children (last visited Mar. 24, 2011).

¹² Eskenazi et al., *supra* note 6.

¹³ 29 C.F.R. § 575.1(b) (Westlaw 2011).

¹⁴ COURSEN-NEFF, *supra* note 1, at 88; Eduardo Gonzalez, Jr., *Migrant Farmworkers: Our Nation's Invisible Population*, EXTENSION, May 27, 2008.

¹⁵ COURSEN-NEFF, *supra* note 1, at 28.

¹⁶ ILO Recommendation Concerning the Prohibition and Immediate Elimination of the Worst Forms of Child Labor, June 17, 1999, 38 I.L.M. 1211 (1999); International Labor Conference Convention on the Minimum Age for Admission to Employment and Work, June 6, 1973, *available at* www.ilo.org/ipecc/Action/Time-BoundProgrammes/Legal/Conventions/lang--en/index.htm.

¹⁷ 29 C.F.R. § 575.1(b) (Westlaw 2011).

¹⁸ 21 U.S.C.A. § 346a (Westlaw 2011).

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highlights the increased health risks faced by children.¹⁹ Unfortunately, no enforceable legislation exists to protect child farmworkers from the dangers of pesticide exposure, and so they continue to legally work in unsafe conditions.

Agriculture is the most dangerous industry for child workers,²⁰ yet the laws that regulate the work of children in the fields are among the least protective of worker health and safety. This Article examines the failure of U.S. laws and international obligations to protect children from the devastating effects of pesticide exposure. Part II of this Article will explain the presence of children in fields and their heightened vulnerability to pesticides compared to adult farmworkers. In addition, it will discuss the deficiencies in current pesticide laws that result in inadequate protection for child farmworkers. Part III will examine the United States' unsuccessful attempts to protect child farmworkers on both a national and international level. That Part will specifically look at the risk-assessment techniques used by EPA when considering a pesticide for approval and discuss how a proposed EPA policy paper will change current risk-assessment methods to include children in pesticide registrations. Part IV will discuss improvements to current procedures that could minimize harmful effects to children resulting from pesticide exposure. Finally, the Article concludes that a comprehensive solution that addresses the reasons young children are working in fields and the role of EPA in enforcing worker protection laws is necessary to keep child farmworkers safe and healthy.

II. BACKGROUND

Designed to kill living organisms, pesticides can cause harm to humans and the environment.²¹ A pesticide is any substance intended to prevent, destroy, or mitigate living organisms that cause damage to crops or animals.²² The smaller, growing bodies of children are especially susceptible to these dangerous chemicals that can cause long-term

¹⁹ Env'tl. Prot. Agency, *Revised Risk Assessment Methods for Workers, Children of Workers in Agricultural Fields, and Pesticides with No Food Uses*, 74 Fed. Reg. 65,121 (Dec. 9, 2009).

²⁰ DEP'T OF HEALTH AND HUMAN SERVS., NAT'L INST. FOR OCCUPATIONAL SAFETY AND HEALTH, DHHS (NIOSH) PUB. NO. 2003-128, PREVENTING DEATHS, INJURIES, AND ILLNESSES OF YOUNG WORKERS 4 (2003) (agriculture accounted for forty-two percent of all work-related fatalities of young workers between 1992 and 2000 and, unlike in other industries, half of the victims in agriculture were under the age of fifteen; for agriculture workers fifteen to seventeen years old, the risk of fatal injury is four times the risk for young workers in other industries).

²¹ *What is a Pesticide?*, ENVTL. PROT. AGENCY (Feb. 6, 2011, 12:14 PM), www.epa.gov/opp00001/about/.

²² *Id.*

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physical and mental health problems.²³ Thousands of children are directly exposed to pesticides on a regular basis when they work in agriculture fields under outdated labor laws.²⁴ Yet the federal law that regulates pesticide registration and use ignores the reality of children's increased vulnerabilities to pesticides, leaving children who are legally working in the fields unprotected.²⁵

A. CHILDREN FACE INCREASED HEALTH RISKS FROM EXPOSURE TO PESTICIDES COMPARED TO ADULTS

Children's developing bodies are more sensitive to the health risks caused by pesticide exposure while working in agriculture fields compared to adults.²⁶ Children are not "little adults": they have different exposure rates, sensitivities, and reactions to pesticide exposure due to certain neurological, biological, and social characteristics.²⁷ Children breathe twice as much air in relation to their body weight compared to adults, thereby absorbing a higher concentration of pesticides while working in fields.²⁸ Additionally, certain child behaviors, such as putting objects in their mouths, acting recklessly, or playing in the fields, may create new and different exposure pathways compared to adults who do not have these habits.²⁹ These new exposure pathways increase children's levels of pesticide exposure and exacerbate their developing bodies' sensitivities to these chemicals.

Young children may be especially vulnerable to pesticides because their developing organ systems are more sensitive and their bodies have limited capabilities for enzymatically detoxifying the chemicals in pesticides.³⁰ When infants and children are exposed to pesticides, the effects of these chemicals can interfere with their central nervous

²³ Eskenazi et al., *supra* note 6.

²⁴ 29 C.F.R. § 575.1(b) (Westlaw 2011); GAO/RCED, *supra* note 8, at 6.

²⁵ Linda J. Fisher et al., *A Practitioner's Guide to the Federal Insecticide, Fungicide, and Rodenticide Act*, 24 ENVTL. L. REP. 10,451 (1994).

²⁶ *Pesticides and Food: Why Children May Be Especially Sensitive to Pesticides*, ENVTL. PROT. AGENCY, www.epa.gov/pesticides/food/pest.htm (last visited Mar. 24, 2011) [hereinafter *Pesticides and Food*].

²⁷ Exec. Order No. 13,045, 62 Fed. Reg. 19,885 (Apr. 21, 1997).

²⁸ *Id.*; see also PESTICIDE ACTION NETWORK, *supra* note 11.

²⁹ Exec. Order No. 13,045, 62 Fed. Reg. 19,885 (Apr. 21, 1997); *Pesticides and Food*, *supra* note 26; GAO/RCED, *supra* note 8, at 17 ("Children below twelve years of age, whether working in agriculture or accompanying their parents to the fields, have greater vulnerability to the adverse effects of pesticides.").

³⁰ Eskenazi et al., *supra* note 6.

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systems and hinder critical tissue growth and organ development.³¹ Research indicates that children exposed to pesticides have higher rates of brain cancer, neurodevelopment delays, and other chronic and acute health risks.³² The National Academy of Sciences has found that exposure to neurotoxic compounds during the prenatal and early childhood period of brain development may result in permanent loss of brain function, even at levels deemed safe for adults.³³ The combination of these neurological, biological, and behavioral differences in children and current pesticide use in agriculture translates into dangerous vulnerabilities and severe long-term health risks for child farmworkers.

B. THOUSANDS OF CHILDREN ARE IN AGRICULTURE FIELDS EACH YEAR

Hundreds of thousands of children work in fields each year, though the exact number is not reliably known due to the seasonal and often informal nature of farm work.³⁴ Additionally, many farmworkers do not have the time or permanent housing required to participate in surveys, and growers sometimes employ farmworkers off the books.³⁵ As a result of the uncertainties produced by these factors, government studies have produced drastically different estimates.³⁶ In 1998 the Department of Labor's National Agriculture Workers Survey estimated that about 129,000 fourteen- to seventeen-year-olds worked in crops in the United States.³⁷ The Bureau of the Census, however, reported that the number of agriculture workers age fifteen to seventeen may be as high as 290,000.³⁸ Unfortunately, these statistics fail to account for the presence of children younger than fourteen or fifteen, respectively, who are also legally working in fields, and no data exists to fill this gap.³⁹ Another survey estimated that farm operators reported that they directly hired 211,588 children under the age of eighteen in 2006.⁴⁰ However, this number excluded children who were working on their own families' farms, for

³¹ *Id.*

³² *Id.*

³³ *Id.* at 416.

³⁴ COURSEN-NEFF, *supra* note 1, at 16.

³⁵ *Id.* at 15.

³⁶ GAO/RCED, *supra* note 8, at 6.

³⁷ *Id.*

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ COURSEN-NEFF, *supra* note 1, at 16.

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labor contractors, or off the books.⁴¹ Farmers reportedly rely on labor contractors to hire fifteen percent or more of their workers and about 497,000 children under the age of eighteen worked on their families' farms in 2006.⁴² These contradictory and incomplete estimates provide more questions than answers for legislators attempting to determine the size of the child farmworker population in order to design laws to protect them.

Children even younger than what child labor laws permit work in the fields or are present because they accompany their parents to work.⁴³ Children of migrant farmworkers typically start working in fields during the summers, weekends, and after school at eleven or twelve years of age, but there is evidence that many start work much earlier.⁴⁴ Representatives from Human Rights Watch interviewed child farmworkers as young as seven years old.⁴⁵ In addition, many parents report that they take their children to the fields because they cannot afford childcare.⁴⁶ Since forty percent of farmworkers' children are infants and toddlers, it can be inferred that children even younger than seven years old are in the fields.⁴⁷ Regardless of the incomplete estimates of the size of the child farmworker population, the available statistics indicate that high numbers of children of all ages are present in fields where large quantities of pesticides are often used.

C. THE FAIR LABOR STANDARDS ACT PERMITS CHILDREN TO LEGALLY PERFORM AGRICULTURE WORK AT YOUNGER AGES COMPARED TO OTHER INDUSTRIES

Children working on farms are subject to different – and more lenient – working restrictions compared to children working in any other occupation.⁴⁸ The Fair Labor Standards Act (FLSA) sets limits on child

⁴¹ *Id.*

⁴² *Id.* at 16-17.

⁴³ *Id.* at 5 (reporting that family financial need helps push children in the fields and poverty among farmworkers is more than double that of wage and salary employees in the United States).

⁴⁴ *Id.* at 5.

⁴⁵ *Id.* at 5; GAO/RCED, *supra* note 8, at 17 (“The Department of Labor’s Wage and Hour Division has found children as young as six years old working in agriculture fields during its inspections.”).

⁴⁶ COURSEN-NEFF, *supra* note 1, at 6.

⁴⁷ VALENTINA I. KLOOSTERMAN ET AL., EDUC. & DEV. CTR. INC., MIGRANT AND SEASONAL HEAD START AND CHILD CARE PARTNERSHIPS 9 (2003), available at ccf.edc.org/PDF/migrant_report_en.pdf.

⁴⁸ 29 C.F.R. § 575.1(b) (Westlaw 2011).

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labor based on the worker's age and the nature of the occupation.⁴⁹ When FLSA was originally passed in 1938, it reflected the conditions of United States agriculture at that time and provided few restrictions on child labor.⁵⁰ The agriculture industry primarily consisted of small farms, lower levels of mechanization and pesticide use made agriculture safer than many other industries, and children were expected to work at an early age.⁵¹ In response, the FLSA only barred children from working in agriculture during the hours that they were legally required to attend school, yet provided an array of additional protections for children working in non-agriculture industries.⁵² As farming machinery became more powerful and pesticides increased in potency, however, the laws protecting children in this industry lagged behind these developments and left child farmworkers in grave danger.

The provisions in FLSA pertaining to child labor in the agriculture industry are inconsistent with the sections governing similar work in non-agriculture industries.⁵³ Hundreds of thousands of children work in fields at young ages when they would not be able to legally work in any other occupation.⁵⁴ FLSA sets a minimum age of sixteen years for employment that applies to all occupations besides agriculture.⁵⁵ In the agriculture industry, however, ten-year-old children can be employed to work in short-season crops outside of school hours.⁵⁶ Additionally, children who are twelve years of age can be employed in nonhazardous occupations outside of school hours with parental consent, while children who are at least fourteen years of age do not need such consent but are still barred from specific "particularly hazardous" occupations.⁵⁷ Non-agriculture industries allow children under sixteen years old to work no more than three hours per day during the school year.⁵⁸ However, "outside of school hours" is not defined for the agriculture industry so children's hours spent working in fields are not restricted by any meaningful time limit.⁵⁹ In an interview with Human Rights Watch, Olivia A., age fourteen, described her schedule picking blueberries in

⁴⁹ *Id.*

⁵⁰ GAO/HEHS, *supra* note 9, at 34.

⁵¹ *Id.*

⁵² *Id.*

⁵³ 29 C.F.R. § 575.1(b).

⁵⁴ *Id.*

⁵⁵ 29 C.F.R. § 570.2(a).

⁵⁶ 29 C.F.R. § 575.1(b).

⁵⁷ *Id.*

⁵⁸ 29 C.F.R. § 570.35(a)(5).

⁵⁹ 29 C.F.R. § 575.1(b).

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Michigan:

I would wake up at five and start working at six [a.m.]. We'd come out at six or seven [p.m.], depending on if it rained and how quick we worked. We worked seven days, all day, except the days it rained. That was the only time we got a break. I felt happy we could go home. We didn't have to be in the sun no more.⁶⁰

Child workers who are performing activities deemed “particularly hazardous” outside of the agriculture industry receive more protections than child agriculture workers. In the agriculture industry, children who are at least sixteen years old can perform any activity despite any “particularly hazardous” conditions that may exist.⁶¹ On the other hand, FLSA requires that workers in non-agriculture industries be eighteen years old before performing hazardous activities.⁶² Additionally, children as young as ten years old can legally work within very close range of pesticides as long as they are not directly handling or applying the pesticides themselves.⁶³ The only “particularly hazardous” activity relating to pesticides that must not be performed by a child under age sixteen is the actual handling of pesticides classified as Category I or II of toxicity;⁶⁴ working in close proximity to toxic pesticides or applying pesticides with lower toxicity levels is permitted for child workers of all ages.

D. THE CHIEF LAW REGULATING PESTICIDES DOES NOT PROTECT CHILD FARMWORKERS

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) is the primary federal law governing the regulation of pesticides, including the manufacture, labeling, sale, and use of these chemicals.⁶⁵ This law

⁶⁰ COURSEN-NEFF, *supra* note 1, at 24. Human Rights Watch data is based on field research done in 2009 and early 2010. *Id.* at 14. Staff interviewed fifty-nine children under eighteen years of age from fourteen states in different regions of the United States. *Id.* They also interviewed eleven people ages eighteen to twenty years old who had worked on farms as children. *Id.* The staff chose the fourteen states specifically to gain exposure to both seasonal and migrant farmworkers. *Id.*

⁶¹ 29 C.F.R. § 575.1(b).

⁶² 29 C.F.R. § 570.2(a).

⁶³ 29 C.F.R. § 570.71(a).

⁶⁴ 29 C.F.R. § 570.71(a)(9) (“Handling or applying (including cleaning or decontaminating equipment, disposal or return of empty containers, or serving as a flagman for aircraft applying) agricultural chemicals classified under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 135 et seq.) as Category I of toxicity, identified by the word ‘poison’ and the ‘skull and crossbones’ on the label; or Category II of toxicity, identified by the word ‘warning’ on the label.”).

⁶⁵ Fisher et al., *supra* note 25.

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sets forth specific requirements for registering pesticides, in addition to enforcement measures that can be used by EPA for violations of FIFRA. Through an array of amendments since FIFRA's inception, the law has provided more leniency for farm owners and pesticide manufacturers and less protection for the workers who use the pesticides. This lack of protection could be attributed to many things, including catering to the profit motive of the agriculture industry by prioritizing the approval of pesticides, a lack of public knowledge about the dangers faced by child farmworkers, and lawmakers' tendency to ignore the presence of children in fields.

Today, FIFRA balances the political influences of the agriculture industry with health protections for consumers through the Food Quality Protection Act.⁶⁶ Unfortunately, while the addition of the Worker Protection Standard (WPS) to FIFRA may have improved protections for adult farmworkers, the more vulnerable children who work alongside them remain in danger. Additionally, ensuring that farm owners follow the WPS requirements is nearly impossible for farmworkers due to the limited complaint options within the WPS and the poor enforcement history by the states and EPA.

i. FIFRA Has Historically Prioritized Broad Approval of Pesticides over Human Health

Since FIFRA's beginning as the Insecticide Act of 1910,⁶⁷ the law's provisions have favored sweeping approval of pesticides over increased regulations to protect human health.⁶⁸ Originally, the Insecticide Act of 1910 protected consumers from fraudulent pesticide labels but did not include any positive safety standards.⁶⁹ FIFRA superseded the Insecticide Act in 1947 and gave the United States Department of Agriculture the responsibility of regulating pesticides.⁷⁰ However, the new Act did not allow the Secretary of Agriculture to evaluate the environmental impacts of proposed pesticides, reject an application, or cancel an existing registration.⁷¹ Guided by the influence of the industry-friendly agriculture committees in the House and Senate, the Secretary

⁶⁶ 21 U.S.C.A. § 346a (Westlaw 2011).

⁶⁷ Insecticide Act of Apr. 26, 1910, ch. 191, 36 Stat. 331 (7 §§ 121 to 134) (prohibiting the sale of fraudulently labeled pesticides) (repealed 1947).

⁶⁸ Fisher et al., *supra* note 25.

⁶⁹ James Smart, *All the Stars in the Heavens Were in the Right Places: The Passage of the Food Quality Protection Act of 1996*, 17 STAN. ENVTL. L.J. 273, 277 (1998).

⁷⁰ Fisher et al., *supra* note 25.

⁷¹ *Id.*

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held little actual regulatory authority, and FIFRA remained primarily a labeling statute for almost thirty years.⁷²

The Federal Environmental Pesticide Control Act of 1972 (FEPCA) overhauled FIFRA's requirements by transferring pesticide regulation responsibilities to EPA while substantially limiting its power to restrict pesticide registrations.⁷³ On the one hand, FEPCA was the first statute to link pesticide regulation with environmental protection concerns by adding a new standard for pesticide registration that prohibited pesticides from causing "unreasonably adverse effects on human health or the environment."⁷⁴ On the other hand, these amendments required EPA to pay compensation to the pesticide registration holder whenever a pesticide was cancelled or suspended.⁷⁵ EPA had even less incentive to restrict pesticide registrations when another amendment to FIFRA was passed in 1975 that required EPA to consider the impact that canceling a pesticide would have on the agriculture industry before it could issue a cancellation order.⁷⁶ Further accommodations were made for the pesticide industry three years later, with an amendment to FIFRA that allowed EPA to issue conditional registrations even if necessary data to support the registration were not yet available.⁷⁷

After the series of amendments in the 1970s, FIFRA basically remained the same until the late 1990s when two important sections were added: the Food Quality Protection Act of 1996 (FQPA)⁷⁸ and the Worker Protection Standard (WPS).⁷⁹ While these amendments mark the first time that the health and safety of those exposed to pesticides was prioritized, they are not designed to protect child farmworkers, with their increased susceptibilities to pesticides.

ii. *The Food Quality Protection Act Does Not Protect Children from Occupational Exposure to Pesticides*

FQPA improved protections against unsafe consumption of pesticide residue on food products but did not include protections for occupational exposure.⁸⁰ Under FQPA, EPA is required to reassess all

⁷² Smart, *supra* note 69, at 278.

⁷³ 7 U.S.C. § 136 (Westlaw 2011).

⁷⁴ Kahn, *supra* note 7, at 311.

⁷⁵ Fisher et al., *supra* note 25, at 10,452.

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ 21 U.S.C.A. § 346a (Westlaw 2011).

⁷⁹ 40 C.F.R. pt. 170 (Westlaw 2011).

⁸⁰ 21 U.S.C.A. § 346a (Westlaw 2011) (titled "Tolerances and exemptions for pesticide

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existing food tolerances⁸¹ and establish health-based standards to account for children's increased vulnerabilities to environmental toxicants.⁸² EPA is required to include the aggregate impact of pesticide exposure through food, water, residential pesticide use, and other non-occupational sources of exposure.⁸³ Additionally, the unique vulnerabilities of infants and children are accounted for by using an additional safety factor to include these considerations in dietary risk assessments.⁸⁴ The enactment of FQPA was the first time that the heightened risks of pesticides to infants or children were incorporated into FIFRA.⁸⁵

The considerations for children in FQPA illustrate the reality that Congress and EPA have recognized the differences between how adults and children react to pesticide exposure. However, EPA is only required to ensure that the amount of pesticide residue remaining on food products by the time they are sold to consumers is safe for infants and children; a farmer's use of pesticides before the crops are sold is not subject to these additional standards.⁸⁶ By carving out this exception, FQPA does not provide any protection for the most vulnerable subset of children – those who are directly exposed to pesticides while working in agriculture.

iii. *FIFRA's Worker Protection Standard Fails to Account for Children Effectively*

FIFRA's WPS regulates the working conditions for farmworkers in place of the Occupational Safety and Health Act (OSHA), which sets the standards for most other occupations.⁸⁷ Since it was passed in 1970, the goal of OSHA has been "to assure so far as possible every working man

chemical residues").

⁸¹ *Pesticide Tolerances*, ENVTL. PROT. AGENCY, www.epa.gov/opp00001/regulating/tolerances.htm (last visited Mar. 24, 2011) ("Limits on pesticides left on foods are called 'tolerances' in the U.S. (they are referred to as maximum residue limits, or MRLs, in many other countries).").

⁸² Eskenazi et al., *supra* note 6.

⁸³ *Accomplishments Under the Food Quality Protection Act (FQPA)*, ENVTL. PROT. AGENCY, www.epa.gov/opp00001/regulating/laws/fqpa/fqpa_accomplishments.htm (last visited Mar. 24, 2011).

⁸⁴ 21 U.S.C.A. § 346a(b)(2)(C) (Westlaw 2011).

⁸⁵ Smart, *supra* note 69, at 339 ("Although environmentalists also secured important victories, their successes were largely on new issues. The chief environmentalist victory is the provision protecting infants and children.").

⁸⁶ ENVTL. PROT. AGENCY, *supra* note 83.

⁸⁷ *Organized Migrants in Cmty. Action, Inc. v. Brennan*, 520 F.2d 1161, 1163 (D.C. Cir. 1975).

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and woman in the Nation safe and healthful working conditions.”⁸⁸ However, OSHA’s comprehensive standards do not apply to workers who are protected by other federal agencies that promulgate regulations affecting occupational health and safety.⁸⁹ By enforcing the WPS regulations, EPA preempts the Secretary of Labor from acting.⁹⁰ Courts have held that Congress gave EPA the authority to provide protection for farmworkers by enacting FIFRA, so OSHA does not apply to farmworker exposure to pesticides.⁹¹ Therefore, protections for adult and child farmworkers against any dangers of occupational pesticide exposure are codified in FIFRA through the WPS.⁹²

The WPS aims to protect, through various methods, 2.5 million agriculture workers and pesticide handlers at approximately 600,000 agriculture establishments.⁹³ It sets standards for restricted-entry intervals⁹⁴ and protective clothing,⁹⁵ bars any actions by employers that may prevent or discourage workers from complying with FIFRA,⁹⁶ and gives directions for emergency assistance for injured or poisoned workers.⁹⁷ In addition, the WPS requires that farmworkers who enter a treated area during the restricted-entry interval receive detailed worker safety training on potential health hazards, first aid, personal protective equipment, and other requirements listed on pesticide labels related to exposure.⁹⁸ However, the WPS never mentions children, so it does not take their vulnerabilities into account.⁹⁹

⁸⁸ 29 U.S.C.A. § 651(b) (Westlaw 2011).

⁸⁹ 29 U.S.C.A. § 653(b)(1) (Westlaw 2011) (“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.”).

⁹⁰ 29 U.S.C. § 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.”).

⁹¹ *Organized Migrants*, 520 F.2d at 1163.

⁹² 40 C.F.R. pt. 170 (Westlaw 2011).

⁹³ *Id.*; *Worker Safety and Training*, ENVTL. PROT. AGENCY (Mar. 24, 2011, 8:33 PM), www.epa.gov/pesticides/health/worker.htm.

⁹⁴ 40 C.F.R. § 170.112. “Restricted-entry interval means the time after the end of a pesticide application during which entry into the treated area is restricted.” 40 C.F.R. § 170.3.

⁹⁵ 40 C.F.R. § 170.112(a)(4).

⁹⁶ 40 C.F.R. § 170.7(b).

⁹⁷ 40 C.F.R. § 170.160.

⁹⁸ 40 C.F.R. § 170.112(5); Thomas A. Arcury et al., *Implementation of EPA’s Worker Protection Standard Training for Agriculture Laborers: An Evaluation Using North Carolina Data*, 114 PUB. HEALTH REP. 459, 460 (1999).

⁹⁹ Fisher et al., *supra* note 25; L.A. McCauley et al., *Pesticide Knowledge and Risk Perception Among Adolescent Latino Farmworkers*, 8 JOURNAL OF AGRICULTURAL SAFETY AND

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For children, pesticide safety training is often nonexistent or either difficult or impossible to understand.¹⁰⁰ A principle requirement of the WPS is that agriculture employers must provide training for all workers “in a manner that the worker can understand”¹⁰¹ – a standard that is left to the employer’s discretion. Given the limited experience and education of child farmworkers, they often require additional time and different training instructions to recognize safety concerns compared to adults.¹⁰² Only 18.9% of workers under twenty years of age report ever receiving some information or training regarding pesticides.¹⁰³ Furthermore, in a study that consisted of personal interviews with migrant farmworkers ages eleven to eighteen, one thirteen-year-old boy explained: “Sometimes the boss is talking so fast and using those big words, and I don’t understand, and I am just staring at him.”¹⁰⁴ Workers generally report that they receive training instructions in English, even though the vast majority of farmworkers do not speak English as their first language.¹⁰⁵ These reports show that leaving the manner of the training to the employer’s discretion often does not lead to effective training for child workers. Without proper training, children do not know how to avoid the dangers of pesticide exposure.

The WPS sets training requirements for employers to give farmworkers information about protecting themselves from pesticide exposure, but this information never reaches child farmworkers who cannot understand the training. WPS training is required to include information about adhering to the precautions that appear on pesticides labels, such as wearing protective clothing and following restricted-entry interval requirements.¹⁰⁶ Without this information, children cannot adequately protect themselves while working in fields where pesticides are used. In a study conducted on 102 migrant adolescent farmworkers in Washington County, Oregon, 42.4% reported that they believed that they were never exposed to pesticides, despite evidence that the berry and vegetable fields where they worked were undoubtedly sprayed with

HEALTH 397 (2002).

¹⁰⁰ Mary K. Salazar et al., *Hispanic Adolescent Farmworkers’ Perceptions Associated with Pesticide Exposure*, 26 W. J. NURSING RES. 146, 156 (2004).

¹⁰¹ 40 C.F.R. § 170.130(d)(1) (Westlaw 2011).

¹⁰² Salazar et al., *supra* note 100, at 160.

¹⁰³ Arcury et al., *supra* note 98, at 463 (study conducted through personal interviews with 270 farmworkers recruited from thirty-five labor sites in an eight-county area).

¹⁰⁴ Salazar et al., *supra* note 100.

¹⁰⁵ *Id.*; see also McCauley et al., *supra* note 99, at 402 (in a cross-sectional survey of 102 migrant farmworkers ages thirteen to eighteen, all workers spoke Spanish as either their first or second language, and 36.3% spoke primarily indigenous languages).

¹⁰⁶ 40 C.F.R. § 170.7(a)(2) (Westlaw 2011).

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pesticides.¹⁰⁷ The inadequate training provided to these workers was further reflected in reports that 40.2% of the adolescents thought that there were no ways to protect themselves from pesticides, yet 79.5% thought that pesticides could cause health problems, and over 50% had fears about these health effects.¹⁰⁸ Providing child farmworkers with correct information so they can take proactive steps to avoid pesticide exposure is part of the responsible use of these chemicals. Such proactive steps are crucial when the most important protections afforded by the WPS – restricted-entry intervals – are not properly formulated to account for child exposure to pesticides.

The restricted-entry intervals assigned to pesticides by EPA during the registration process fail to account for the full range of children's ages that are present in the fields. EPA reports that these entry intervals are designed to protect children at least twelve years of age, because these are workers of legal age.¹⁰⁹ However, this determination ignores the reality that children younger than twelve legally work under FLSA, many work at ages younger than FLSA permits, and still others accompany their parents into the fields.¹¹⁰ Additionally, EPA does not even account for twelve-year-olds in setting restricted-entry intervals, since EPA erroneously assumes that pesticides affect children of this age in the same manner as adults.¹¹¹

Children's smaller, developing bodies make them more vulnerable to pesticide exposure because their skin comes into contact with the chemicals at a rate that is higher than what their smaller body mass can safely absorb.¹¹² EPA recommends using a standard adult body weight of 154 pounds to calculate safe levels of pesticide exposure while claiming to account for twelve year olds.¹¹³ Yet the average twelve-year-old male weighs 110.9 pounds and the average twelve-year-old female weighs 114.3 pounds.¹¹⁴ Body weights are used in exposure assessments to

¹⁰⁷ McCauley et al., *supra* note 99, at 402.

¹⁰⁸ *Id.*

¹⁰⁹ GAO/RCED, *supra* note 8, at 16.

¹¹⁰ Salazar et al., *supra* note 100, at 150-51 (in a study consisting of adolescent farmworkers ages eleven to eighteen, ninety percent reported that they were younger than thirteen when they started working, and the average age to begin working in the fields was 10.9 years old); *see also* COURSEN-NEFF, *supra* note 1, at 5; GAO/RCED, *supra* note 8, at 6.

¹¹¹ Env'tl. Prot. Agency, *supra* note 19.

¹¹² Linda J. Phillips, Robert J. Fares & L. Gregory Schweer, *Distributions of Total Skin Surface Area to Body Weight Ratios for Use in Dermal Exposure Assessments*, 3 J. EXPOSURE ANALYSIS & ENVTL. EPIDEMIOLOGY 331, 335 (1993).

¹¹³ *Id.* at 332.

¹¹⁴ Cynthia L. Ogden et al., *Mean Body Weight, Height, and Body Mass Index*, 347 ADVANCED DATA FROM VITAL AND HEALTH STATISTICS, Oct. 2004, at 3.

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calculate the ratio between surface area and body weight (SA/BW).¹¹⁵ The SA/BW ratio is important in pesticide exposure assessments because greater skin surface area means more skin that can serve as an exposure pathway into the child's body.¹¹⁶ In exposure assessments, the surface area of the skin that comes into contact with the pesticide is often called the "contact rate."¹¹⁷ Assigning a fixed weight of 154 pounds for this ratio therefore does not accurately reflect the various body sizes of farmworkers and excludes anyone who weighs less than this standard, which is primarily children.

When actual body weights of human subjects are used to measure the effects of pesticides on farmworkers instead of the 154-pound standard, the evidence demonstrates that children are far more vulnerable to the health effects of pesticides.¹¹⁸ With these varying body weights, researchers found a negative correlation between the ratio of skin surface area to body weight (SA/BW) and age, to a point.¹¹⁹ This negative correlation indicates that younger children are smaller and therefore have a higher ratio between the surface skin area that absorbs the pesticides and the body weight that protects them.¹²⁰ While very young children are the most vulnerable to pesticide exposure, this increased vulnerability of children continues until their bodies stop developing.¹²¹ Despite observing the negative correlation discussed above for infants and children, no such correlation was observed for the adult population.¹²² This distinction indicates that age is a significant factor in SA/BW ratios, the ratio used to determine restricted-entry intervals, until the body has stopped growing, around age eighteen.¹²³ Treating twelve-year-olds the same as adults when determining restricted-entry intervals creates an inaccurate protection standard that exposes children to pesticides at potentially dangerous levels even when properly enforced.

The lack of protection for child farmworkers in the WPS is compounded by the deficient enforcement mechanisms available for farmworkers to cure FIFRA violations. Even if farmworkers have enough knowledge to recognize that their employer has violated the WPS

¹¹⁵ Phillips, Fares & Schweer, *supra* note 112, at 331.

¹¹⁶ *Id.* at 333.

¹¹⁷ *Id.* at 331.

¹¹⁸ *Id.* at 334.

¹¹⁹ *Id.* at 335.

¹²⁰ *Id.*

¹²¹ Phillips, Fares & Schweer, *supra* note 112, at 335.

¹²² *Id.* (defining "infants" as ages 0-2 years old and "children" as ages 2.1-17.9 years old, based on the ages at which "obvious changes" in SA/BW occurred).

¹²³ *Id.*

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requirements, their only official recourse is to file a formal complaint with the state pesticides office.¹²⁴ The threat of such a complaint is not a deterrent to bad behavior by employers, however, if farmworkers lack the knowledge and resources to ever file such a complaint.

iv. FIFRA Provides Inadequate Enforcement Mechanisms to Punish Violations of the Worker Protection Standard

The system for pesticide regulation enforcement severely limits farmworkers' ability to report and obtain remedies for employer violations of FIFRA. While FIFRA grants the EPA and the Attorney General of the United States power to enforce the Act, the law does not provide for a private-citizen right of action.¹²⁵ The Ninth Circuit, in *Fiedler v. Clark*, determined that Congress explicitly rejected the possibility of citizen suits under FIFRA, including suits against EPA for failure to investigate and prosecute FIFRA violations.¹²⁶ Therefore, if farmworkers are injured due to FIFRA violations, they cannot seek judicial assistance.¹²⁷ Instead, they must either file a complaint with the state pesticides office,¹²⁸ or hope that the farm will be inspected and assessed a penalty.¹²⁹

Making complaints to the state pesticides office, the only form of recourse for injured farmworkers, is equivalent to no recourse at all for many farmworkers. Economic, education, and language barriers often prevent farmworkers from reporting FIFRA violations in this manner, and FIFRA violations are left unpunished.¹³⁰ While exact estimates vary, half of all farmworkers earn annual wages of less than \$7,500 per year, and at least half of farmworkers have family incomes of less than \$11,000, which falls far below U.S. poverty levels.¹³¹ Furthermore,

¹²⁴ See, e.g., *Reporting Pesticide Problems*, CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION, www.cdpr.ca.gov/docs/dept/quicklinks/report.htm (Mar. 24, 2011, 8:47 PM) (federal EPA website gives no information about reporting a FIFRA violation).

¹²⁵ *Fiedler v. Clark*, 714 F.2d 77, 79 (9th Cir. 1983).

¹²⁶ *Id.*

¹²⁷ *Id.*

¹²⁸ See, e.g., DEPARTMENT OF PESTICIDE REGULATION, *supra* note 124.

¹²⁹ *Types of FIFRA Inspections*, ENVTL. PROT. AGENCY, www.epa.gov/oecaerth/monitoring/programs/fifra/fifratypes.html (Last updated February 21, 2011).

¹³⁰ Daniel Carroll et al., *Findings from the National Agriculture Workers Survey (NAWS) 2001-2002*, RESEARCH REPORT NO. 9, at 17 (2005).

¹³¹ U.S. DEP'T OF LABOR, FINDINGS FROM THE NATIONAL AGRICULTURE WORKERS SURVEY 1997-1998, RESEARCH REPORT NO. 8, vii (2000); see also Gonzalez, *supra* note 14 ("61 percent of U.S. farm workers' income [falls] below the poverty level."); Carroll et al., *supra* note 130, at 47 ("Based on the poverty guidelines that are issued each February by the U.S. Department of Health and Human Services, and which are based on family size, thirty percent of all farmworkers had total

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among all crop workers interviewed for the 2001-2002 National Agriculture Workers Survey, forty-four percent reported that they could not speak English “at all,” and twenty-six percent said that they could speak English only “a little.”¹³² Similarly, fifty-three percent of these farmworkers reported that they could not read English “at all,” and twenty percent said that they could read English “a little.”¹³³ Therefore, finding the state pesticide office to report a complaint in person or even finding a complaint form on the Internet will likely require more resources and abilities than many farmworkers possess.¹³⁴ Overall, the one reporting option under FIFRA does not reflect the reality of the farmworker population. When the only other option for farmworkers is to wait for EPA to discover the farm’s violations during an inspection, realistic reporting methods for farmworkers are crucial in light of shortcomings of EPA in independently monitoring and enforcing the activities of agricultural employers.

The nonbinding agreements between EPA and the states are inadequate for punishing violations of FIFRA and protecting farmworkers. When a state enters into a cooperative agreement with EPA, it becomes the entity that implements and enforces FIFRA pesticide requirements, including the WPS.¹³⁵ Once the cooperative agreement is formed, EPA’s role in enforcing the WPS is limited.¹³⁶ EPA has developed guidance documents to aid states in reporting their pesticide enforcement measures and allocates funds to each state to carry

family incomes that were below the poverty guidelines.”).

¹³² Carroll et al., *supra* note 130, at 2. This study was based in data collected between October 1, 2000, and September 30, 2002, through face-to-face interviews with 6,472 crop farm workers. Twenty-three percent of the farmworkers interviewed were born in the United States, seventy-five percent were born in Mexico, and two percent were born in Central America. *Id.* at ix.

¹³³ Carroll et al., *supra* note 130, at 21.

¹³⁴ DEPARTMENT OF PESTICIDE REGULATION, *supra* note 124 (click on “online form” under “File a Complaint with Cal/EPA” heading). The “Pesticide: Health and Safety” section of the EPA website regarding pesticide exposure directs people who have been exposed to pesticides to “call 911.” *Emergency Information*, ENVIRONMENTAL PROTECTION AGENCY, www.epa.gov/pesticides/health/emergency.htm#human (April 8, 2011, 9:16 AM). To actually file a complaint, a farmworker must visit his or her state’s pesticide office website to find the phone number for his county’s Agricultural Commissioner, although the EPA website does not give such directions; one must have personal knowledge that the state pesticide office will accept citizen complaints. *See, e.g.*, DEPARTMENT OF PESTICIDE REGULATION, *supra* note 124.

¹³⁵ GAO/HEHS, *supra* note 9, at 15.

¹³⁶ *Inspections Under the Federal Insecticide, Fungicide, and Rodenticide Act*, ENVTL. PROT. AGENCY, www.epa.gov/oecaerth/monitoring/programs/fifra/inspections.html (Mar. 24, 2011, 8:55 PM) (“All but two states, Colorado and Wyoming, have primary use enforcement responsibility. EPA has an oversight role to ensure the adequacy of the overall state or tribal program. In addition, a state or tribe may, at any time, request EPA to act upon a violation utilizing remedies available under FIFRA.”).

out pesticide enforcement activities.¹³⁷ In 1999, EPA gave the states \$20 million to administer their pesticide enforcement activities, including \$2 million specifically set aside for the WPS.¹³⁸ Despite this funding, a lack of oversight and specificity in EPA requirements results in inconsistent and scarce enforcement by the states.

Thorough worker protection inspections that could discipline agriculture employers are not conducted in many states because the cooperative agreements do not include any enforceable requirements regarding these inspections.¹³⁹ The goals that EPA has negotiated with some regions regarding the number of worker protection inspections that states should conduct are often not met because the states are not held accountable in any way.¹⁴⁰ For example, EPA's Atlanta region set the goal that each of the eight states in the region would conduct 60-100 worker protection inspections each year.¹⁴¹ In 1998, however, two states in this region, Alabama and Tennessee, reported that they conducted five inspections and four inspections, respectively.¹⁴² Even these low numbers could be exaggerated, given that varying state interpretations of "worker protection inspection" mean that some states report having conducted an inspection if they ask a single question about worker protection.¹⁴³

The inadequacy of state inspections goes unnoticed due to a lack of regional and federal EPA office oversight, and insufficient reporting requirements prevent EPA from taking steps to reduce the frequency and types of violations.¹⁴⁴ In 1998, three of EPA's ten regional offices followed up on worker protection inspections solely through file reviews, discussions with state officials, and mid- and end-of-year reports.¹⁴⁵ None of these offices ever sent representatives to accompany state inspectors to fields.¹⁴⁶ In addition, when data is reported to the regional offices by the state inspectors, they receive a report on the number of violations and the penalties that were issued, such as fines or warning letters.¹⁴⁷ The regional offices do not know anything about the reasons

¹³⁷ GAO/RCED, *supra* note 8, at 20.

¹³⁸ *Id.* at 20.

¹³⁹ *Id.* at 21.

¹⁴⁰ *Id.*

¹⁴¹ *Id.*

¹⁴² GAO/RCED, *supra* note 8, at 21.

¹⁴³ *Id.*

¹⁴⁴ *Id.* at 22.

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.* at 23.

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for the violations or any other actions that the states took in response to the violations.¹⁴⁸ Without such data, the EPA cannot determine what sections of the WPS are being violated, particularly in regard to child farmworkers. By allowing states to perform lax inspections and reporting, EPA disables any enforcement mechanisms that could potentially protect child farmworkers.

III. THE UNITED STATES' ATTEMPTS TO PROTECT CHILD FARMWORKERS ARE UNACCEPTABLE

The United States does not provide any additional protections against pesticide exposure for child farmworkers, despite the knowledge that thousands of children legally work in the fields each year and that children are more susceptible to the dangers of chemical pesticides. In reality, the United States provides less protection for child farmworkers than any other child worker by creating more lenient labor laws for the agriculture industry.¹⁴⁹ By doing this, the United States falls below the standard for child labor adopted by the international community, which prohibits children from performing work that is likely to harm their health, safety, or morals,¹⁵⁰ in violation of an International Labor Convention (ILO) treaty to which it is a signatory.¹⁵¹ Unfortunately, steps taken to date toward solving these violations are inadequate. A proposed EPA policy paper acknowledges the need to provide heightened protections for child farmworkers against the dangers of pesticides, but it falls short of adequately protecting the health and safety of child farmworkers.¹⁵² Additionally, a bill was proposed that would have significantly decreased the number of child farmworkers in fields, but it did not make it out of committee before the end of the congressional session.¹⁵³ Given the large numbers of children working in fields each year, these inconsequential and futile attempts to protect child farmworkers and rise to the standard employed by countries around the world are intolerable.

¹⁴⁸ *Id.*

¹⁴⁹ 29 C.F.R. § 575.1(b) (Westlaw 2011).

¹⁵⁰ International Labor Conference Convention for the Elimination of the Worst Forms of Child Labor art. 3, June 17, 1999, 1999 WL 33292717.

¹⁵¹ Teresa Young Reeves, *Harvest of Danger: The Child Farmworker in the United States*, 8 No. 2 HUM. RTS. BRIEF 12, 13 (2001).

¹⁵² Env'tl. Prot. Agency, *supra* note 19.

¹⁵³ *H.R. 3564: CARE Act of 2009*, GOVTRACK.US (Dec. 27, 2010, 10:25 AM), www.govtrack.us/congress/bill.xpd?bill=h111-3564.

A. THE INTERNATIONAL COMMUNITY HAS SET CHILD LABOR STANDARDS THAT THE UNITED STATES IS NOT MEETING

Despite international efforts to mitigate the dangers of pesticide exposure to child farmworkers because pesticides are “likely to harm the health and safety . . . of children,” the United States’ laws fail to meet the standard set by the ILO.¹⁵⁴ The desire of participants in the ILO to mitigate risks to child workers led to two international treaties that apply to child farmworkers exposed to pesticides.¹⁵⁵ First, the Convention Concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour (Convention 182) defines the “worst forms of child labor” as “work which . . . is likely to harm the health, safety, or morals of children.”¹⁵⁶ Countries that ratified this treaty, including the United States,¹⁵⁷ committed to designing and implementing programs that eliminate these forms of child labor.¹⁵⁸ On the other hand, the United States has chosen not to ratify the Convention on the Minimum Age for Admission to Employment and Work (Convention 138), which has been ratified by 155 other countries.¹⁵⁹

When assessing current and future laws to guarantee compliance with Convention 182, countries are urged to consider Recommendation No. 190.¹⁶⁰ Recommendation No. 190 characterizes “hazardous work” as that which will “likely” harm a child worker’s health, safety, and morals, including, among other things, “work in an unhealthy environment which may expose children to hazardous substances.”¹⁶¹ Convention 182 is non-self-executing, so its provisions are only enforceable through domestic legislation that mirrors the convention’s terms; before ratifying

¹⁵⁴ International Labor Conference Convention for the Elimination of the Worst Forms of Child Labor, *supra* note 150.

¹⁵⁵ *Id.*; International Labor Conference Convention on the Minimum Age for Admission to Employment and Work, *supra* note 16, art.3.

¹⁵⁶ International Labor Conference Convention for the Elimination of the Worst Forms of Child Labor, *supra* note 150.

¹⁵⁷ Reeves, *supra* note 151, at 13 (“On December 2, 2000, Convention 182 officially entered into force in the United States.”).

¹⁵⁸ International Labor Conference Convention for the Elimination of the Worst Forms of Child Labor, *supra* note 150.

¹⁵⁹ *Database of International Labour Standards*, INTERNATIONAL LABOUR ORGANIZATION (Oct. 31, 2010), www.ilo.org/ilolex/english/newratframeE.htm.

¹⁶⁰ ILO Recommendation Concerning the Prohibition and Immediate Elimination of the Worst Forms of Child Labor, *supra* note 16 (“The provisions of this Recommendation supplement those of the Worst Forms of Child Labour Convention, 1999, and should be applied in conjunction with them.”).

¹⁶¹ ILO Recommendation Concerning the Prohibition and Immediate Elimination of the Worst Forms of Child Labor, *supra* note 16.

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Convention 182 the United States was required to ensure that its domestic laws complied with its requirements.¹⁶² The current laws of the United States do not protect the safety, health, and morals of child farmworkers and therefore fail to meet the standards required by Convention 182. The Fair Labor Standards Act (FLSA) is the law that the United States claims fulfills this obligation, yet it allows ten year olds to work in agriculture amongst pesticides and includes its own definition for “hazardous work.”¹⁶³ The FLSA has a much higher threshold for what constitutes “hazardous work” than Convention 182; it only prohibits children at least sixteen years old from engaging in activities that will almost *inevitably* expose them to harm, such as the direct application of pesticides.¹⁶⁴ Because these limited protections under the FLSA do not satisfy the requirements of Convention 182, the United States is violating the terms of this international treaty.

The United States is among a small group of countries that have not ratified Convention 138, which requires participating countries to set the minimum age for employment at a level that is consistent with the physical and mental development of children.¹⁶⁵ In particular, the treaty sets the minimum age for children to work under hazardous conditions at eighteen years old,¹⁶⁶ provides a basic minimum age for employment of fifteen years old, and allows children ages thirteen to fifteen years old to perform light work, provided that it does not threaten their health and safety or hinder their education.¹⁶⁷ Given that these standards mirror those set out in the FLSA for child labor in all occupations except for agriculture,¹⁶⁸ the United States has demonstrated that such standards are possible. Nevertheless, the United States has not extended these protections to child farmworkers.

B. EPA POLICY PAPER ADDRESSES THE DANGERS OF PESTICIDES TO CHILD FARMWORKERS BUT FAILS TO PROTECT THEM

The EPA’s Office of Pesticide Programs released a non-binding

¹⁶² Reeves, *supra* note 151, at 13.

¹⁶³ 29 C.F.R. § 575.1(b) (Westlaw 2011); Reeves, *supra* note 151, at 13.

¹⁶⁴ 29 C.F.R. § 575.1(b); Reeves, *supra* note 151, at 13.

¹⁶⁵ International Labor Conference Convention on the Minimum Age for Admission to Employment and Work, *supra* note 16, art. 1 (155 out of 194 countries have ratified Convention 138).

¹⁶⁶ International Labor Conference Convention on the Minimum Age for Admission to Employment and Work, *supra* note 16, art.3.

¹⁶⁷ International Labor Conference Convention on the Minimum Age for Admission to Employment and Work, *supra* note 16, art.7.

¹⁶⁸ 29 C.F.R. §§ 570.2(a), 570.34 (Westlaw 2011).

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policy paper in December 2009 declaring its intention to apply the risk-assessment techniques developed for FQPA to all pesticide risk assessments, not just dietary risk assessments.¹⁶⁹ The paper suggests modifying pesticide registration risk assessments to include an additional safety factor to protect children, considerations of aggregate exposures to pesticides from multiple sources, and the inclusion of cumulative effects of multiple pesticides.¹⁷⁰ The purpose of the policy paper is to fill in the gaps of FQPA¹⁷¹ to protect workers from occupational exposure to pesticides,¹⁷² but it falls short of this goal for a number of reasons.

EPA announced that this proposal coincides with improvements in scientific research and considerations of environmental justice,¹⁷³ but it still lacks the necessary force and requirements to protect child farmworkers. While this proposal does include an additional safety factor for children, the policy paper continues to use inadequate risk-assessment methods that fail to protect children who are exposed to pesticides while working in fields. Additionally, when applying the safety factor, children ages twelve and over are incorrectly assumed to have reactions to pesticides that are similar to adults; the safety factor will only calculate a pesticide's risk to infants, young children, and fetuses.¹⁷⁴ Finally, the policy paper limits the data required for modification of risk-assessment methods to the extent that children are exposed to pesticides; the paper thus ignores the absence of data specifically relating to how child farmworkers react to pesticide exposure.¹⁷⁵ By setting deficient standards, EPA is amplifying the risks faced by child farmworkers by giving agriculture employers definitive, yet flawed, standards to rely on.

i. Proposed Additions to the Risk-Assessment Process in the EPA Policy Paper Are Insignificant and Ineffective for Protecting Children from Occupational Pesticide Exposure

EPA's policy paper modifies the risk-assessment analysis used to determine if a pesticide will be registered, by adding an additional safety

¹⁶⁹ Env'tl. Prot. Agency, *supra* note 19 (policy was posted to the Federal Register on December 9, 2009 and comment period ended April 12, 2010; Docket EPA-HQ-OPP-2009-0889 at regulations.gov).

¹⁷⁰ *Id.*

¹⁷¹ 21 U.S.C.A. § 346a (Westlaw 2011).

¹⁷² Env'tl. Prot. Agency, *supra* note 19.

¹⁷³ *Id.*

¹⁷⁴ *Id.*

¹⁷⁵ *Id.* (policy paper acknowledges that the data required is not limited to that identified in the paper, but still fails to acknowledge that any sort of research about the effects of pesticides on children is needed).

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element for children.¹⁷⁶ This approval process focuses on a pesticide's potential effects to ensure that it does not cause "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."¹⁷⁷ To meet this standard, EPA applies a quantitative risk assessment that estimates the nature and probability of adverse health effects that may occur as a result of exposure to the particular pesticide.¹⁷⁸ This process requires a number of discrete steps.¹⁷⁹

An EPA risk manager decides if a pesticide should be registered and, if so, what limitations or requirements for manufacture, use, or sale should be placed on the pesticide, by conducting a quantitative risk assessment.¹⁸⁰ The first step in this process is to ascertain whether exposure to the pesticide could cause an increase in specific adverse health effects that are likely to occur in humans compared to someone who is not exposed to the pesticide (hazard identification).¹⁸¹ Next, the risk manager will assess how the likelihood and severity of these adverse health effects are related to the amount of exposure to the pesticide (dose-response assessment).¹⁸² Once it is established how a human would react to specific doses of the pesticide, the risk manager attempts to measure or estimate the frequency, duration, and magnitude of human exposure to the pesticide (exposure assessment).¹⁸³ This analysis is concluded with the risk manager's judgment concerning the nature and presence of potential risks (risk characterization).¹⁸⁴ Using this information, the risk manager determines what warning and safety instructions must be printed on the pesticide's label.¹⁸⁵

However, EPA's policy paper will not change the general risk-assessment process. EPA will continue to register a pesticide if it determines that the expected use of the product will not cause unreasonable environmental harm when used according to any restrictions specified by the risk manager.¹⁸⁶ However, during the first

¹⁷⁶ *Id.*

¹⁷⁷ 7 U.S.C. § 136(bb) (Westlaw 2011).

¹⁷⁸ *Risk Assessment*, ENVTL. PROT. AGENCY, www.epa.gov/riskassessment/health-risk.htm (last visited Mar. 24, 2011).

¹⁷⁹ *Id.*

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

¹⁸² *Id.*

¹⁸³ *Id.*

¹⁸⁴ *Id.*

¹⁸⁵ *Id.*

¹⁸⁶ 7 U.S.C.A. § 136a(c)(5) (Westlaw 2011).

two steps of the process, hazard identification and dose-response assessment, EPA has proposed applying the additional safety factor already used in dietary risk assessments under FQPA to protect infants and young children.¹⁸⁷ In addition, EPA declares that it will call attention to the “completeness of the exposure database” to account for concerns regarding exposure differences between children and adults.¹⁸⁸ This proposal fails to protect child farmworkers because it applies data that does not represent actual child farmworkers to the uncertain risk-assessment process and produces inaccurate, though reassuringly quantifiable, estimations of the harm that the pesticide will cause to child farmworkers.

ii. *Risk-Assessment Techniques Produce Inaccurate Portrayals of Child Farmworkers’ Reaction to Pesticides*

The plain words of EPA’s description of a risk assessment allow speculation, uncertainty, and estimates in the process and resulting measurements. EPA explains that “risk assessment characterizes the *likelihood* of a chemical agent or mixture to cause an adverse health effect for humans and on a *case-by-case* basis provides a numerical way to gauge the *possible* impact on a population if exposure were to occur.”¹⁸⁹ Yet this process provides the only criteria for approving the manufacture, sale, and use of harmful chemical pesticides that are used in the presence of children. In addition to the personal judgment calls required of every risk manager, EPA’s data regarding the effects of pesticides on children is based on incorrect assumptions. Using incorrect data leads to inaccurate portrayals of how child farmworkers may actually react to a pesticide.

Risk assessments are based a series of assumptions due to an absence of data regarding the effect of every chemical on a wide range of individuals in a variety of environments.¹⁹⁰ In every step of the risk-assessment process, uncertainties arise that require the risk manager to make particular judgment calls and assumptions.¹⁹¹ How each individual risk manager deals with these uncertainties could have a significant

¹⁸⁷ Env’t. Prot. Agency, *supra* note 19.

¹⁸⁸ *Id.*

¹⁸⁹ Brian D. Israel, *An Environmental Justice Critique of Risk Assessment*, 3 N.Y.U. ENVTL. L.J. 469, 476 (1995) (emphasis added).

¹⁹⁰ Robert R. Kuehn, *The Environmental Justice Implications of Quantitative Risk Assessment*, 1996 U. ILL. L. REV. 103, 114.

¹⁹¹ Kathy Bunting, *Risk Assessment and Environmental Justice: A Critique of the Current Legal Framework and Suggestions for the Future*, 3 BUFF. ENVTL. L.J. 129, 136 (1996).

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effect on the outcome of the analysis, potentially leading to a conclusion that is not objective.¹⁹² For example, when the risk manager is identifying the hazards, he or she might review epidemiologic studies of people exposed to chemicals, results from animal experiments, and data from short-term human- or animal-cell tests.¹⁹³ Determining how much weight to give each of these studies involves a substantial amount of uncertainty, especially when trying to extrapolate the results of animal tests to humans or short-term human studies to years of working in fields.¹⁹⁴ Problems with extrapolating tests on animals and defining “typical” exposure levels arise in the remaining three steps of the risk-assessment process: dose-response analysis, exposure assessment, and risk characterization.¹⁹⁵ The sterile testing environment that does little to mimic actual farmworker exposure to pesticides further complicates these uncertainties.¹⁹⁶ Often animals are exposed to abnormally high doses of the pesticide to save time.¹⁹⁷ Additionally, many test animals are specially bred to minimize genetic variability in order to better isolate the effects of the chemical by creating animals that are genetically – and unnaturally – homogenous.¹⁹⁸ These problems are especially present when trying to predict the adverse effects of pesticide exposure on children, because so little information exists about levels and routes of children’s pesticide exposure that it is not feasible to use the results from animal studies in a risk assessment.¹⁹⁹ The uncertainties and assumptions that riddle the risk-assessment process are compounded by additional considerations that must be included for subpopulations.²⁰⁰

An absence of data on specific groups or subpopulations that is then substituted with available, yet unrelated, data leads to inaccuracies in the risk assessment results that are relied on for pesticide registrations.²⁰¹ EPA released exposure guidelines for risk managers that acknowledge

¹⁹² *Id.*; see also Kuehn, *supra* note 190, at 134 (The National Academy of Sciences identified 50 opportunities in the quantitative risk-assessment process for scientists to make discretionary judgments about data or its interpretation.).

¹⁹³ Kuehn, *supra* note 190, at 113.

¹⁹⁴ *Id.* (EPA identifies default assumption guidelines for use in the risk-assessment process to reduce the opportunities for the assessor’s biases and value to enter the analysis; even these default assumptions were created by other scientists, however, so they may still reflect certain values that could create results that are not entirely objective.).

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

¹⁹⁷ *Id.*

¹⁹⁸ *Id.*

¹⁹⁹ Eskenazi et al., *supra* note 6, at 416.

²⁰⁰ Kuehn, *supra* note 190, at 118.

²⁰¹ *Id.* at 123.

the importance of analyzing the effects of exposure among subpopulations, yet EPA does not require the collection of data on these subpopulations.²⁰² Instead, a typical risk assessment will characterize an absence of data as equivalent to an absence of risk.²⁰³ Rather than requiring the risk manager to show why information on the effects of the chemical on a subpopulation is not relevant to the risk assessment, the risk manager assumes that there is no risk to the subpopulation.²⁰⁴ By relying on the genetic makeup and lifestyle patterns of white, middle-class Americans – a group for which data does exist – the risks to low-income and minority populations are minimized despite evidence that these groups tend to be the most exposed.²⁰⁵

Using a typical risk assessment to determine the effects of a pesticide on child farmworkers is counterproductive because the standard assumptions are an inaccurate representation of the average exposed child. Rather than conducting studies to identify the actual demographics of these workers, EPA's epidemiology studies are based on the responses of healthy white adult males. Yet age, lifestyle, genetic background, sex, ethnicity, and race may all contribute to an individual's susceptibility to an environmentally-related disease.²⁰⁶ Although approximately seventy-nine percent of farmworkers are men, eighty-three percent of farmworkers are Hispanic.²⁰⁷ Considerations of race and ethnicity are particularly significant when studying the effects of pesticides on human health, because certain genetic traits that increase susceptibility to environmental pollutants are more prevalent in some racial minorities.²⁰⁸ Furthermore, by using the standard model of a healthy white adult male, children are either not considered or, in light of EPA's proposed policy paper, are incorrectly categorized as having identical responses to pesticides as adults if they are at least twelve years old.

By basing risk-assessment analyses on a healthy white 154-pound male body, EPA's default approach does not consider the increased vulnerability that children have to pesticide exposure. Research has found that for purposes of measuring effects of pesticide exposure, adulthood starts at age eighteen, because that is when the body stops growing.²⁰⁹ EPA's policy paper proposes bringing children into this

²⁰² *Id.* at 152.

²⁰³ *Id.* at 154.

²⁰⁴ *Id.* at 151.

²⁰⁵ *Id.*

²⁰⁶ Kuehn, *supra* note 190, at 122.

²⁰⁷ Carroll et al., *supra* note 130, at 4.

²⁰⁸ Kuehn, *supra* note 190, at 123.

²⁰⁹ Phillips, Fares & Schweer, *supra* note 112, at 335.

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consideration but then explains that separate exposure assessments will not be required for children twelve to seventeen years old, because their exposure levels are similar to that of adults.²¹⁰ Even if the additional safety factor incorporated into risk assessments did properly protect infants and young children, children working legally in the fields at age twelve remain unaccounted for.²¹¹ The array of flaws in using the standard risk-assessment analysis to determine the effects of pesticides on farmworker children also raises substantial environmental justice issues.

iii. Using Risk Assessment to Analyze the Effects of Pesticides on Child Farmworkers Leads to Environmental Injustice

The goals of environmental justice are to provide both procedural and distributional equity to all people,²¹² yet both goals are violated in the risk-assessment process.²¹³ First, risk-assessment techniques disproportionately place the burden of environmental hazards, such as health effects from pesticide exposure, on minorities and low-income groups.²¹⁴ In order to accurately assess the health effects that may arise from exposure to a pesticide, cumulative and multiple exposures to toxic substances must be taken into account to determine how the human body will actually react to the presence of another chemical.²¹⁵ Studies show that people of color and low-income groups have higher exposure to toxic substances and live closer to pollution sources than non-minorities.²¹⁶ While the policy paper proposes the use of aggregate and cumulative risk assessments when registering a pesticide, this recommendation is only in regard to the effects of other pesticides, not other typical environmental hazards faced by child farmworkers.²¹⁷ A

²¹⁰ Env'tl. Prot. Agency, *supra* note 19 (“Based on an analysis of exposure studies that compared the exposures of farmworker children with adults, and also analyzing the current risk-assessment approach from a mechanistic perspective by considering how the ratio of skin surface area to body weight correlate with differences in age, it is expected that workers ages twelve to seventeen years old will have exposures similar to adults. Therefore, a separate exposure assessment will not be required for this age group.”).

²¹¹ *Id.*

²¹² Kuehn, *supra* note 190, at 129.

²¹³ *Id.* at 130.

²¹⁴ *Id.* at 103.

²¹⁵ *Id.* at 117 (“multiple exposures” means a person is exposed to a combination of two or more different chemicals; “cumulative exposures” means a person is exposed to one or more chemicals from different media over time).

²¹⁶ *Id.* at 118.

²¹⁷ Env'tl. Prot. Agency, *supra* note 19.

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failure to consider these additional exposures in a risk assessment will adversely impact minority and low-income populations disproportionate to other population groups because the health effects caused by exposure to the pesticide will not be accurately calculated.²¹⁸

In addition to the unequal distribution of harmful health effects, procedural issues also arise when farmworkers are barred from meaningful participation in the risk-assessment process. The right to a healthy workplace and environment should include the opportunity for all affected people to participate in the decision-making process.²¹⁹ Quantitative risk assessment, however, involves a sophisticated understanding of toxicology, physiology, and mathematical modeling.²²⁰ A complex public-participation process for all pesticide registration applications creates additional barriers for farmworkers to provide input.²²¹ When EPA receives an application for a pesticide registration, it publishes a Notice of Receipt in the Federal Register, which commences an initial thirty-day public comment period.²²² After the risk-assessment process is completed and a proposed decision for registration is written, this decision is added to the public docket for another thirty-day comment period.²²³ Similar to the ineffective complaint process under the WPS discussed earlier, few farmworkers possess the resources or ability to meaningfully participate in this part of the pesticide registration process. Information regarding the actual health impacts of pesticides on farmworkers is needed to make risk assessment more effective, yet the only population with direct access to this information – farmworkers – is essentially barred from participation. The risk-assessment process reinforces distributional and procedural inequities that already exist between farmworkers and other populations by creating a process that yields unequal results and prevents equal participation.

iv. Relying on the EPA's Policy Paper Masks Problems, Rather than Fixing Them

When using risk assessment to determine what restrictions should govern a pesticide registration, EPA is deciding what is an acceptable amount of risk for farmworkers to encounter during their workday and

²¹⁸ Kuehn, *supra* note 190, at 118.

²¹⁹ *Id.* at 130.

²²⁰ *Id.*

²²¹ *Public Involvement in Pesticide Registration*, ENVTL. PROT. AGENCY, www.epa.gov/opp00001/regulating/registration-public-involvement.html (last visited Mar. 24, 2011).

²²² *Id.*

²²³ *Id.*

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life.²²⁴ Risk-assessment techniques contradict the precautionary nature of environmental law by requiring workers to accept a certain level of risk from a man-made harm, rather than trying to prevent the risk before it occurs.²²⁵ As a result of the EPA policy paper's failure to consider the sensitive nature of children's developing bodies, the combination of dangerous chemical pesticides and serious environmental justice concerns are cloaked under the guise of "science."

By managing, regulating, and distributing risks through the current risk-assessment paradigm, EPA is reinforcing the stratification of people into various categories – primarily those who are protected by the "healthy 154-pound white male" standard and those who are not – rather than finding a more comprehensive way to protect people from pesticide exposure.²²⁶ The current process legitimizes human exposure to harmful chemicals by purporting to determine the exact responses that humans will have to these chemicals and then formulating restrictions to address these responses.²²⁷ With the uncertainty of and the assumptions made in these determinations, however, the objectivity of this process becomes questionable. By relying solely on this "objective" science for environmental decision-making, despite clear evidence that it is nearly impossible to make risk assessments of pesticides objective, institutional racism is masked and reinforced through devices such as the EPA policy paper discussed earlier.²²⁸

EPA's policy paper claims to resolve environmental justice issues that arise from failing to take child farmworkers into account, yet the process will continue to rely on assumptions and uncertainties that create these problems. In this paper, EPA ignores the fact that it is not equipped to accurately measure child migrant workers' reactions to pesticides due to a lack of data. Furthermore, the additional safety factor purporting to protect children applies only to infants and young children, not children of legal working age.²²⁹ Finally, the policy paper is not binding on EPA or subject to judicial review and it explicitly invites outside parties to assert reasons for deviating from the policy, notwithstanding that binding legislation is feasible given the success of FQPA.²³⁰ By making risk

²²⁴ Bunting, *supra* note 191, at 135.

²²⁵ *Id.* at 148.

²²⁶ Robert D. Bullard, *Unequal Environmental Protection: Incorporating Environmental Justice in Decision Making*, in *WORST THINGS FIRST?: THE DEBATE OVER RISK-BASED NATIONAL ENVIRONMENTAL PRIORITIES* 237, 242 (Adam M. Finkel & Dominic Golding eds., 1994).

²²⁷ *Id.*

²²⁸ *Id.* at 260.

²²⁹ Evtl. Prot. Agency, *supra* note 19.

²³⁰ *Id.*

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assessment a requisite element of regulating pesticides, the EPA overlooks actual risks posed by a pesticide to child farmworkers, due to generalizations that are made about vulnerabilities of children. True protections for child farmworkers will come only through a variety of binding mechanisms that truly take into account the increased vulnerability to pesticides felt by children and the social factors that influence their exposure rates.

C. THE GOOD INTENTIONS OF THE CARE BILL NONETHELESS FAILED TO PROTECT CHILDREN FROM PESTICIDE EXPOSURE

Modifying the Fair Labor Standards Act to prevent farm owners from legally hiring children as young as ten years old to work in the fields would better align the current pesticide registration methods with the workers who are exposed to these registered pesticides. A bill proposing such a modification was introduced during the 111th Congress in September 2009 and was titled the “Children’s Act for Responsible Employment of 2009” or the “CARE Act of 2009.”²³¹ Congresswoman Lucille Roybal-Allard (D-Cal.) introduced this bill specifically to “[address inequities] by raising labor standards and protections for farmworker children to the same level set for children in occupations outside of agriculture.”²³² The proposed CARE Act would have set the minimum age to begin working in agriculture at sixteen years old and would have prohibited workers from performing “hazardous activities,” including applying pesticides, until they reached the age of eighteen.²³³ The bill retained limited exemptions for family farms and allowed fourteen- and fifteen-year-olds to work in certain agriculture jobs during specific hours.²³⁴

The proposed CARE Act bill is no longer active and can be revived only if a member of Congress reintroduces the bill.²³⁵ After its introduction, the bill was referred to the House subcommittee on Workforce Protections on November 16, 2009.²³⁶ The committee took no action and the bill was cleared from the docket when the 112th session of

²³¹ Children’s Act for Responsible Employment of 2009, H.R. 3564, 111th Cong. (2009).

²³² *Bill Introduced to Protect Farmworker Children and Keep Them in School*, Congressman Lucille Roybal-Allard (Feb. 6, 2011, 9:08 PM), roybal-allard.house.gov/News/DocumentSingle.aspx?DocumentID=144907.

²³³ Children’s Act for Responsible Employment of 2009, H.R. 3564, 111th Cong. (2009).

²³⁴ *H.R. 3564: CARE Act of 2009*, GOVTRACK.US (Dec. 27, 2010, 10:25 AM), www.govtrack.us/congress/bill.xpd?bill=h111-3564.

²³⁵ *Id.*

²³⁶ *Id.*

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Congress began on January 5, 2011.²³⁷ The introduction of this bill and its eventual disappearance from the docket are both good and bad signs for the future health and safety of child farmworkers.

IV. PROPOSED SOLUTIONS FOR THE FUTURE

The health and safety of child farmworkers are at risk because children are exposed to pesticides that were approved based on data that did not accurately account for their reactions to these chemicals. Keeping child farmworkers safe from harmful pesticides requires combined action on the part of Congress, EPA, states, and agriculture employers to modify labor laws, registration methods, training procedures, and resources available to farmworkers. While achieving all of these efforts would guarantee that child farmworkers would be safe from pesticide exposure, each proposal individually could begin to solve this problem.

Reintroducing and enacting the CARE bill would protect the health of the thousands of child farmworkers who are legally working in fields each year. By making the standards for child labor in the agriculture industry congruent to the standards for all other industries, the United States would meet its international obligations and would no longer treat the health of child farmworkers as less important than the health of child workers in other industries. Passing such legislation is challenging, however, as shown by the failure of the previous CARE bill and in light of the range of conflicting interests in Congress. Until the danger faced by child farmworkers from pesticides is prioritized on a political level, EPA should use the commitment to protecting child farmworkers that spurred its proposed policy paper to create binding and meaningful change in its regulations and procedures.

If labor laws pertaining to the agriculture industry are not modified and children continue to work in fields, agriculture employers must be required to actually give WPS trainings “in a manner that [children] can understand.”²³⁸ The WPS should be amended to include additional education requirements that specifically incorporate children of various legal working ages. Since approximately eighty-one percent of farmworkers report that their native language is Spanish,²³⁹ the additional education standards must include language components. While agriculture employers are expected to properly train their workers, they should not be expected to know about youth education and development.

²³⁷ *Id.*

²³⁸ 40 C.F.R. § 170.130(d)(1) (Westlaw 2011).

²³⁹ Carroll et al., *supra* note 130, at 17.

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Comprehensive information regarding pesticide safety that is developed for the full range of ages of children who can legally work in fields at this time – ten to seventeen years old – should be provided to agriculture employers as part of their obligations under WPS.

The cooperative agreements between EPA and the states should include enforceable worker protection inspection and reporting requirements to make the WPS an effective tool for protecting child farmworkers. At a minimum, these requirements should define “worker protection inspection,” set a minimum number of inspections that need to occur each year, and improve requirements for reporting to EPA. Improved monitoring would allow EPA to track frequent violations of the WPS and target its efforts toward solving these problems. Additionally, agriculture employers would have an incentive to follow the WPS provisions if there was a substantial threat that they would be punished for violations. Enforcing the cooperative agreements is the only way to make sure that the WPS requirements are followed and provide at least some protection for child farmworkers.

If done correctly, risk assessment can provide a systematic, quantifiable method for evaluating risks while still acknowledging areas of uncertainty and gaps in data.²⁴⁰ Accurate results are impossible to create, however, when gaps in data are treated as equivalent to no risk of harm at all. Instead, an expert group of risk managers recommend that a “reasonable worst case” default value for gaps in data be assigned to remove potential bias.²⁴¹ Therefore, when information such as the effects of multiple or cumulative exposures or effects on children is missing, a risk manager will be required to assume what might reasonably be the worst case.²⁴² The benefits of such a practice would be threefold. First, a requirement to assume the worst-case scenario would encourage agencies to obtain missing information rather than ignoring this gap by assigning a value of zero risk.²⁴³ Second, this method would create a log of important missing information that could be prioritized by the public and by decision makers.²⁴⁴ Finally, assuming a worst-case effect would protect subpopulations, including children, minorities, and low-income groups, whose health would otherwise be disregarded due to the infrequency with which they are generally studied.²⁴⁵ This change in the

²⁴⁰ Kuehn, *supra* note 190, at 150.

²⁴¹ *Id.* at 154.

²⁴² *Id.*

²⁴³ *Id.* at 155.

²⁴⁴ *Id.*

²⁴⁵ *Id.*

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risk-assessment process would allow risk managers to include child farmworkers in the pesticide approval process only if data existed about the effects of the pesticide on child farmworkers; in the absence of such data, the risk manager would be required to give high priority to the health and safety of the child.

The factors contributing to the detrimental effects of pesticides on the health of child farmworkers, including insufficient pesticide regulation and enforcement, a lack of resources for farm worker parents, and a subgroup of people – child migrant workers – who are difficult to study, are great. Nevertheless, international treaties already establish standards to solve these problems, but the United States has chosen to disregard some of these standards and blatantly ignore its obligations to comply with other standards. Separate from these failures, a combination of solutions could at least decrease the risks to children from occupational pesticide exposure and ensure that children are not afflicted with chronic illnesses before they are old enough to make their own decisions.

V. CONCLUSION

Thousands of children are exposed to pesticides while they are working in fields every year, and it is uncertain what the long-term effects of these harmful chemicals will be. The parents of most child farmworkers do not have enough resources to fight for their basic rights as human beings to raise their children in safe and healthy environments. One woman interviewed by a representative from Human Rights Watch said, “When you hear the children talk, you feel bad because you’ve taken a whole childhood away and you don’t realize it because you’re thinking about trying to make payments. . . . For my kids summer was not summer. They had to work. It makes me feel guilty.”²⁴⁶ Because of the use of flawed risk-assessment techniques to approve pesticides, children exposed to pesticides in quantities beyond what they can tolerate will lose more than just their summer and could have long-lasting health effects.

The legislative and scientific power to protect child farmworkers exists. The Food Quality Protection Act proved that legislation can pass that will take children into account in pesticide registrations. Unfortunately, the passage of FQPA may reflect the reality of environmental injustice that people with the fewest resources are often the least protected from environmental hazards. Children of people who

²⁴⁶ COURSEN-NEFF, *supra* note 1, at 23.

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have the time and money to influence policy decisions do not work in fields and are therefore exposed to pesticides only through residue on the food that they eat; these children are now protected through FQPA. Despite research showing that children are also more vulnerable to pesticides when they encounter them while working in the fields, however, no such law has been passed to provide this protection to child farmworkers. The nonbinding EPA policy paper, which reinforces current inadequate practices, is not a sufficient solution.

In light of the changed social and technological conditions since 1938, the protections for children that differentiate between whether they are working in agriculture or any other occupation are outdated. Only a multi-faceted solution that addresses the reasons why children are in fields, including the obsolete FLSA and farmworkers' insufficient resources, will provide children with effective protection from pesticide exposure. Using pesticides to create a perfectly red strawberry must not take priority over the health of a child who is working in the fields to help support his or her family. Every child worker deserves the same health and safety protections, regardless of where he or she works.

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