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May 10, 2024

Dear Administrator Regan:

Agricultural pesticide use has long been one of the most persistent and serious environmental justice issues in our nation. Many agricultural pesticides pose serious acute and chronic health risks to humans, including cancer, birth defects, respiratory diseases, reproductive disorders, neurological disorders, developmental disorders, diabetes, skin conditions, cognitive effects, and death. Risks associated with pesticide exposure are not limited to direct contact. Most pesticides are prone to dispersal through airborne drift, groundwater and surface water contamination, and as residues on agricultural products, workers' clothing, playgrounds, furniture, and other items.

Those least protected by existing pesticide regulations are also those who are disproportionately vulnerable to harm from exposure to pesticides: the two million farmworkers who undergird the U.S. agricultural industry and provide invaluable services to the national economy and food supply. Most are immigrants from Mexico and Central America; have limited English proficiency; are racially and ethnically marginalized and discriminated against; and live in financial precarity due to low wages, the intermittent nature of farm work, high competition for farm jobs, and the lack of non-wage benefits. What's more, immigrant farmworkers, especially those without authorization to live or work in the United States, have high rates of occupational injury and illness coupled with limited access to healthcare.

For two decades, the National Environmental Justice Advisory Council (NEJAC) has raised concerns about environmental issues that disproportionately affect farmworker communities. At its winter 2022 public meeting, the NEJAC invited testimony from a panel of farmworkers and allies about their experiences of routine, extensive pesticide exposure and the many harms they had endured and witnessed as women in agriculture. In the months that followed that meeting, the EPA's Office of Chemical Safety and Pollution Prevention and EPA's Office of Enforcement and Compliance Assurance sought the NEJAC's advice on improving EPA's approach to assessing and addressing pesticide concerns among farmworkers—women and children, in particular. EPA gave the NEJAC four charges, which relate to farmworker access to bilingual pesticide labeling, creating a new environmental

justice indicator for farmworkers, assessing pesticide exposure among children working in agriculture, and Worker Protection Standard inspections. After accepting the charge, the NEJAC's Farmworker and Pesticide workgroup met weekly or biweekly to develop a response informed by research, the experience of farmworkers, and on-the-ground realities. We commend EPA for advancing its efforts on these important issues, for working with the NEJAC on developing the charge, and for inviting our recommendations.


The accompanying report, *Protecting Farmworkers and Their Families*, provides the NEJAC's overarching recommendations as well as our responses to EPA's specific charge questions. We submit these recommendations to EPA with hope that, if acted upon, they will help EPA better protect the health of our nation's farmworkers—protections that will, in turn, better protect all of us. These protections are long overdue and essential for environmental justice.

We look forward to collaborating with the Agency moving forward, such as through the creation of a new NEJAC workgroup focused on this topic. To facilitate that collaboration, we would like the Agency to respond to some of these recommendations at the NEJAC's fall 2024 public meeting and to respond to the full set of recommendations at the NEJAC's spring 2025 public meeting.

Sincerely,



N' Taki Osborne Jelks, PhD, Co-Chair



Jerome Shabazz, Co-Chair

Attachment

cc: NEJAC Members
Michael S. Regan, Administrator
Theresa Segovia, Principal Deputy Assistant Administrator, Office of Environmental Justice and External Civil Rights
Karen L. Martin, Director, Partnerships and Collaboration Division
Paula Flores-Gregg, NEJAC Designated Federal Officer

Protecting Farmworkers and Their Families

Recommendations to EPA from the
National Environmental Justice Advisory Committee

May 10, 2024

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Acknowledgements

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Introduction

The U.S. Environmental Protection Agency (EPA) has responsibility for protecting public health and the environment from the adverse effects of pesticides. The Agency's responsibility is codified in the Federal Insecticide, Fungicide, and Rodenticide Act; the Federal Food, Drug, and Cosmetic Act; the Food Quality Protection Act; the Pesticide Registration Improvement Act; EPA's Agricultural Worker Protection Standard (WPS); and other statutes and regulations. This task is a complicated one, due to the fact that there are more than a thousand actively registered active ingredients and more than 13,000 products, which vary in terms of their toxicity to humans and other animals, mode of action, use rates, application methods, and more.¹ Notwithstanding these variations, many of these pesticides pose serious acute and chronic health risks to humans, including cancer, Parkinson's disease, birth defects, respiratory diseases, reproductive disorders, neurological disorders, developmental disorders, diabetes, skin conditions, cognitive effects, and death. Most pesticides are prone to dispersal through airborne drift, groundwater and surface water contamination, and as residues on agricultural products, workers' clothing, playgrounds, furniture, and other items.

EPA's pesticide program has helped the federal government protect public health and the environment from toxic pesticides. In addition to its longstanding pesticide programs focused on research, risk assessment, risk management, and compliance and enforcement, EPA has recently made several additional investments into training and research that will help fulfill the Agency's responsibilities and strengthen the WPS in various ways. Investments include EPA's 2023 Request for Stakeholder Input on the Proposed Design of a New Grant Program Regarding the Health Care Provider Training Program, its 2023 funding of research centers dedicated to studying the impacts of agricultural pesticide and non-chemical stressors on children's health, and the EPA Pesticide Program Dialogue Committee, including its Farmworkers and Clinicians workgroup. EPA's recent improvements to the WPS include its 2023 proposal to expand the WPS's application exclusion zone requirements. We applaud those efforts.

Notwithstanding these investments, so much more needs to be done. The inadequacy of EPA's efforts to date is demonstrated by various types of data:

- studies of pesticide exposure among farmworkers and the U.S. population;²

1. California Department of Pesticide Regulation, "Actively Registered Active Ingredients (AI) by Common Name," database; <https://www.cdpr.ca.gov/docs/label/actai.htm/>.

2. For instance, see Carly Hyland et al., "Examination of Urinary Pesticide Concentrations, Protective Behaviors, and Risk Perceptions among Latino and Latina Farmworkers in Southwestern Idaho," *International Journal of Hygiene and Environmental Health* 225 (2024): 114285; Thomas A. Arcury et al., "Repeated Pesticide Exposure among North Carolina Migrant and Seasonal Farmworkers" *American Journal of Industrial Medicine* 53, no. 8 (2010): 802–813; Thomas A. Arcury et al., "Farmworker and Nonfarmworker Latino Immigrant Men in North Carolina Have High Levels of Specific Pesticide Urinary Metabolites," *Archives of Environmental and Occupational Health* 73, no. 4 (2018): 219–227; Thomas A. Arcury et al., "Pesticide Exposure among Latinx Children: Comparison of Children in Rural, Farmworker and Urban, Non-Farmworker Communities," *Science of the Total Environment* 763 (2021): 144233; Nathan Donley et al., "Pesticides and Environmental Injustice in the USA: Root Causes, Current Regulatory Reinforcement and a Path Forward," *BMC Public Health* 22, (2022): 708; and Laurie J. Beyranevand et. al., *Essentially Unprotected: A Focus on Farmworker Health Laws and Policies Addressing Pesticide Exposure and Heat-Related Illness*, (Vermont: Center for Agriculture and Food Systems, 2021).

- reports of pesticide illness, many of which cannot be attributed to any specific regulatory violation;³
- epidemiological studies showing that illnesses associated with pesticide exposure are higher among farmers and farmworkers than among the general population;⁴
- air monitoring studies showing that pesticides drift offsite from application sites at levels of health concern;⁵
- studies showing that food products often contain residues of pesticides known to cause adverse effects in humans at low doses;⁶
- continued use of high rates of highly toxic and drift-prone pesticides in agriculture, such as soil fumigants and organophosphates;
- studies demonstrating widespread violations of pesticide laws and regulations; and⁷
- EPA’s own acknowledgements of current pesticide regulations that do not protect human health. For instance, EPA recently acknowledged that the herbicide dimethyl tetrachloroterephthalate (DCPA, or Dacthal), when used in accordance with current regulations, poses “serious, permanent, and irreversible health risks” to farmworkers. While we appreciate the Agency’s stated concerns about this, we are appalled that the EPA did not immediately suspend its registration in light of this knowledge.⁸

Additionally, there are many anecdotal cases of farmworkers exposed to pesticides who have experienced symptoms ranging from mild to severe to chronic. Anecdotal evidence also suggests that farmworkers have high rates of disability at an early age but must keep working because they cannot prove that their work caused their disability. These experiences have been reported to community workers in grassroots organizations that work with farmworkers around the country. Some studies have found that farmworkers have a much lower life expectancy than the broader population.⁹ Through contributing to acute and chronic illness, pesticide poisoning also degrades farmworkers’

3. Jill Lindsey Harrison, *Pesticide Drift and the Pursuit of Environmental Justice* (Cambridge, MA: MIT Press): 35–38, 95–96; Farm Worker Pesticide Project, et al., *Messages from Monitoring: Farm Workers, Pesticides and the Need for Reform* (Farm Worker Pesticide Project, Farmworker Justice Fund, and United Farm Workers, 2005).

4. Donley et al., *Pesticides and Environmental Injustice*, 14. One prominent example is the CHAMACOS research conducted at the UC Berkeley School of Public Health.

5. Harrison, *Pesticide Drift*, 38–41; Clémentine Dereumeaux et al., “Pesticide Exposures for Residents Living Close to Agricultural Lands: A review,” *Environment International* 134 (2020): 105210; Johann G. Zaller et al., “Pesticides in Ambient Air, Influenced by Surrounding Land Use and Weather, Pose a Potential Threat to Biodiversity and Humans,” *Science of the Total Environment* 838, Part 2 (2002): 156012.

6. Alexis M. Temkin et al., “A Pilot Study of Chlormequat in Food and Urine from Adults in the United States from 2017 to 2023,” *Journal of Exposure Science and Environmental Epidemiology* (2024); Catherine Roberts, “We Found Unhealthy Pesticide Levels In 20% of US Produce—Here’s What You Need to Know,” *The Guardian*, 2024; Thomas Green, “Consumer Reports Releases Comprehensive, Science-Based Report Highlighting Pesticide Risks in Fruits and Vegetables,” Heartland Health Research Alliance, April 19, 2024.

7. Donley et al., *Pesticides and Environmental Injustice*; Emma Scott and Gray Norton, *Precarious Protection: Analyzing Compliance with Pesticide Regulations for Farmworker Safety*, (Vermont: Center for Agriculture and Food Systems, 2023);

8. U.S. Environmental Protection Agency, “EPA Warns Farmworkers about Risks of Dacthal,” news release, April 1, 2024.

9. As Dvera Saxton notes, “An oft-quoted number that farmworker life expectancy is [a mere forty-nine years](#) is admittedly [dated](#) and [contested](#). It is really hard to estimate farmworker life expectancy because we don’t have well-organized systems that track deaths within occupational groups, let alone those that employ perpetually marginalized and excluded immigrant farmworkers.... [However,] Even if life expectancy has improved for farmworkers, their quality of life has not.” Dvera I. Saxton, “Farmworkers Are Both #AlwaysEssential and Perpetually Disposable: How Can We Change All That?” *PBS SoCal*, December 8, 2020.

quality of life in substantial ways that cannot be quantitatively measured, such as making workers so ill that they cannot play with their children or help them with homework.

Despite the need for increased efforts to protect U.S. farmworkers, EPA's pesticide program remains hamstrung by the Agency's reductionist approach to risk assessment, which evaluates each pesticide active ingredient in isolation from and without regard to the other chemicals and stressors to which people are exposed in real life. EPA is also hindered by the many challenges with establishing definitive causality between particular pesticide applications and illness—including the long latency period of pesticide-related illnesses and the fact that other chemicals and non-chemical stressors contribute to those same illnesses.¹⁰ The Agency's pesticide program is also undermined by pesticide registrants' refusals to provide appropriate data to risk assessors and other illegal and otherwise unjust tactics that powerful pesticide industry actors use to get their products to market and keep them there regardless of impacts on public health and the environment.¹¹ Additionally, EPA's pesticide program at headquarters and regional offices do not receive adequate resources, which renders the Agency unable to do essential tasks, such as conducting pesticide re-registration reviews in a timely fashion.

Those least protected by existing pesticide regulatory systems are farmworkers.¹² Most of this nation's two million farmworkers are immigrants from Mexico and Central America; have limited English proficiency; are racially and ethnically marginalized and discriminated against; and live in financial precarity due to low wages, the intermittent nature of farm work, high competition for farm jobs, and few non-wage benefits such as health insurance or paid sick leave.¹³ Additionally, at least half of this immigrant farmworking population does not have authorization to live and work in the United States.¹⁴ Unauthorized immigrants have typically incurred substantial debt to be transported into the United States. In addition, the U.S. government's increasing militarization of the U.S.–Mexico border and escalation of immigration enforcement in the interior of the United States make living within the country without authorization much more dangerous and costly but no less necessary for migrants.¹⁵

Extensive research has demonstrated that farmworkers face higher rates of pesticide exposure than the general population and thus have higher rates of pesticide-related illness than the general population.¹⁶ This stems from multiple compounding factors. Farmworkers are regularly exposed to

10. Harrison, *Pesticide Drift*, 41–46.

11. As illustrated in the case of DCPA; see U.S. Environmental Protection Agency, “EPA warns farmworkers about risks of Dacthal,” news release, April 1, 2024. See also: Harrison, *Pesticide Drift*, Chapter 3; Lisa Held, “Chemical Capture: The Power and Impact of the Pesticide Industry,” *Civil Eats*, March 27, 2024.

12. Donley et al., *Pesticides and Environmental Injustice*; Harrison, *Pesticide Drift*, 41–46.

13. Trish Hernandez and Susan Gabbard, *Findings from the National Agricultural Workers Survey (NAWS) 2015–2016: A Demographic and Employment Profile of United States Farmworkers*, (Bethesda: JBS International, 2018).

14. U.S. Department of Agriculture, “Farm Labor,” USDA Economic Research Service, 2024.

15. Jason De Leon, *The Land of Open Graves: Living and Dying on the Migrant Trail* (Berkeley, CA: University of California Press, 2015); Seth Holmes, *Fresh Fruit, Broken Bodies: Migrant Farmworkers in the United States* (Berkeley, CA: University of California Press, 2013).

16. Donley et al., *Pesticides and Environmental Injustice*; Thomas A. Arcury et al., “Organophosphate Pesticide Exposure in Farmworker Family Members in Western North Carolina and Virginia: Case Comparisons,” *Human Organization* 64, no. 1, (2005): 40–51; Jennifer D. Runkle et al., “Pesticide Risk Perception and Biomarkers of Exposure in Florida Female Farmworkers,” (continued)

pesticide applications taking place at their work site and nearby farming operations. Farmworkers are not notified of nearby pesticide applications in advance. Pesticide regulations do not adequately protect farmworkers from exposure. Knowing there is minimal monitoring and enforcement, employers often violate pesticide regulations. Additionally, farmworkers tend to live in pesticide-intensive agricultural areas and thus experience additional exposure through pesticide drift. As we detail in this report, farmworkers often do not receive adequate WPS training, are not provided appropriate or any personal protective equipment (PPE), are often asked to apply pesticides without receiving any training or proper equipment, and unwittingly carry residues home on their clothes, shoes, bodies, and vehicles.

Not only do farmworkers face higher rates of exposure to pesticides relative to the general population, but they are also disproportionately vulnerable to harm from such exposure, due to the many forms of stress they endure. These include stress associated with trying to support their families on poverty-level wages; working long hours and early or late hours; working in extreme temperatures and often without access to clean water, shelter, or rest breaks; working at high risk of harm from ergonomic injuries, sharp tools, insect and snake bites, and large machinery; enduring racist and xenophobic discrimination; and, for many, experiencing sexual harassment and assault. These exposures and experiences are particularly harmful to pregnant women, fetuses, babies, and children.

After exposure to pesticides, immigrant farmworkers and their families are the least likely to receive a satisfactory response from medical, legal, and environmental regulatory institutions. This stems from many factors. For instance, immigrant farmworkers, especially those without authorization to live or work in the United States, have limited access to healthcare. Many farmworkers do not report their experiences of pesticide exposure because they fear retaliation by employers and the possible consequences of interacting with law enforcement or government agencies. Additionally, farmworkers' concerns are often not taken seriously by employers, local officials, or health care workers. Another factor is that farmworkers, like other people living in poverty, cannot afford or otherwise access legal help in cases of exposure.¹⁷

For all of these reasons, agricultural pesticide use has long been and continues to be one of the most persistent and serious environmental justice issues in our nation.¹⁸ Despite the challenges and risks,

Journal of Occupational and Environmental Medicine 55, no. 11 (2013): 1286–92; Alicia L. Salvatore et al., “Occupational Behaviors and Farmworkers’ Pesticide Exposure: Findings from a Study in Monterey County, California,” *American Journal of Industrial Medicine*, 51, no. 10 (2008):782–94; Ashley E. Larsen et al., “Agricultural Pesticide Use and Adverse Birth Outcomes in the San Joaquin Valley of California,” *Nature Communications* 8 (2017): 302; Geoffrey M. Calvert et al., “Acute Occupational Pesticide-Related Illness and Injury—United States, 2007–2011,” *Morbidity and Mortality Weekly Report*, 63, no. 55 (2016) 11–16; Paul K. Mills et al., “Agricultural Exposures and Breast Cancer Among Latina in the San Joaquin Valley of California,” *Journal of Occupational and Environmental Medicine* 61, no. 7 (2019): 552–58.

17. Steven R. Feldman et al., “Health Care Utilization Among Migrant Latino Farmworkers: The Case of Skin Disease,” *Journal of Rural Health* 25, no. 1 (2009): 98–103.

18. Donley et al., *Pesticides and Environmental Injustice*; Anna Belova et al., “A Method to Screen U.S. Environmental Biomonitoring Data for Race/Ethnicity and Income-Related Disparity,” *Environmental Health* 12 (2013): 114; Vy Kim Nguyen et al., “A Comprehensive Analysis of Racial Disparities in Chemical Biomarker Concentrations in United States Women, 1999–2014,” *Environment International* 137 (2020): 105496; Andreas Sjödin et al., “Polybrominated Diphenyl Ethers, Polychlorinated Biphenyls, and Persistent Pesticides In Serum From The National Health and Nutrition Examination Survey: 2003–2008,” (continued)

farmworkers and their allies have been very active politically, have fought for important protections, and have been leading advocates for environmental justice.¹⁹

Agricultural pesticide use has long been and continues to be one of the most persistent and serious environmental justice issues in our nation.

Environmental Science and Technology 48, no. 1 (2014):753–60; Teresa Attina et al., “Racial/Ethnic Disparities in Disease Burden and Costs Related to Exposure to Endocrine-Disrupting Chemicals in The United States: An Exploratory Analysis,” *Journal of Clinical Epidemiology* 108 (2019): 34–43; Lara Cushing et al., “Racial/Ethnic Disparities in Cumulative Environmental Health Impacts in California: Evidence from a Statewide Environmental Justice Screening Tool (CalEnviroScreen 1.1),” *American Journal of Public Health* 105, no. 11 (2015): 2341–48; Nathan Donley, *Lost In The Mist: How Glyphosate Use Disproportionately Threatens California’s Most Impoverished Counties*, Center for Biological Diversity, 2015.

19. Harrison, *Pesticide Drift*; Laura Pulido, *Environmentalism and Economic Justice* (Tucson: University of Arizona Press, 1996); Tracy E. Perkins, *Evolution of a Movement: Four Decades of California Environmental Justice Activism* (Berkeley: University of California Press, 2022).

Background

For two decades, the NEJAC has been raising concerns about environmental issues that disproportionately affect farmworker communities. Concerns have ranged from pesticide exposure in the workplace; exposure via drift through water and air; pesticide safety training; and the assessment of pesticide risks in light of cumulative risks and impacts. In July 2017 and December 2018, the NEJAC communicated its concerns and recommendations to the EPA administrator regarding inadequate protections and enforcement in the WPS.²⁰ The NEJAC reiterated these concerns in its 2021 “100 Day Letter” to the administrator seeking a timely response to the “urgent need for information, training, and representation regarding pesticide hazards, protective measures, workers’ rights, and employer responsibilities under the new Worker Protection Standard rule.”²¹ Among other things, the NEJAC called for “the requirement for annual training of farmworkers on a broader range of pesticide hazard protection, including their rights to file pesticide safety complaints.” In subsequent months, the NEJAC formed a Farmworkers and Pesticides Workgroup to discuss concerns and recommendations with farmworkers, farmworker advocacy organizations, and the Office of Chemical Safety and Pollution Prevention (OCSPP).

The NEJAC’s public meeting on December 1, 2022, included an environmental justice community panel on protecting farmworker women and their families. Testimony was presented by Audelia Cervantes Garcia (farmworker and representative of Líderes Campesinas); Hormis Bedolla (farmworker and organizer with Mujeres Divinas); Elvira Carvajal (farmworker and organizer with Alianza Nacional de Campesinas); Mily Treviño-Sauceda (Executive Director of Alianza Nacional de Campesinas, and former NEJAC member); and Marlene Rojas Lara (coordinator with Alianza Nacional de Campesinas). Panelists shared their experiences of routine, extensive pesticide exposures incurred through working in agriculture while pregnant; giving birth to children with serious birth defects and developmental disorders; enduring a litany of other pesticide-related health problems; losing farmworker kin and peers to death from cancer and other pesticide-related illnesses; having their work and health conditions dismissed by employers and medical care providers; and struggling in vain for decades to receive even the most modest and common-sense actions, such as advance notification of pesticide applications.

Panelist testimony underscored the gravity of pesticide illness among this vulnerable population. They reminded the audience that they are essential workers and asked to be treated as such. They also conveyed their love for and pride in their work and insisted that pesticide laws, regulations, enforcement, and other regulatory programs be enforced and strengthened so that they can work safely and with dignity.

Following this public meeting, the NEJAC began a series of listening sessions with several EPA offices, including EPA’s Office of Enforcement and Compliance Assurance, Office of Children’s Health Protection, and Office of Research and Development, and staff in several EPA regions (2, 4, 6, 9, 10) to understand how EPA and its state and Native nation partner agencies implement pesticide policies, trainings, communication, and regulatory enforcement for agricultural workers and adjacent communities. The NEJAC workgroup members participated in an in-person strategy meeting in March

20. National Environmental Justice Advisory Council, Letter from NEJAC to EPA Administrator Regarding the Worker Protection Standard, July 31, 2017; NEJAC Letter on Worker Protection Standards, December 18, 2018.

21. National Environmental Justice Advisory Council, Letter to EPA Administrator Michael Regan, July 12, 2021.

2023 with EPA leadership and coordinators from OCSPP to develop a set of charge questions to the NEJAC specific to the experience of farmworker women and children, given the extra vulnerabilities experienced by women and children and the relative lack of regulatory attention to them historically.

Panelists shared their experiences of struggling in vain for decades to receive even the most modest and common-sense actions, such as advance notification of pesticide applications.

The charge was presented and accepted by the NEJAC at a public meeting in April 2023. Throughout the remainder of 2023, the NEJAC workgroup met every one or two weeks to develop our responses to the charge questions. (The full text of the charge questions is in appendix 1.) This report is the NEJAC's response to EPA's request. We want to acknowledge EPA senior managers and staff in relevant programs and regions for supporting the formation and function of this workgroup.

Immigrant workers undergird the U.S. agricultural industry and provide invaluable services and sacrifices to the national economy and food supply. The NEJAC offers these recommendations to EPA with hope that, *if acted upon*, they will help EPA better protect the health of our nation's farmworkers—protections that will, in turn, better protect all of us. We commend EPA for taking responsibility for working on these important issues and for inviting the NEJAC's recommendations. We look forward to collaborating with the Agency moving forward.

Overarching Recommendations

Protecting farmworker health from the harms associated with pesticide exposure will require much more than simply addressing the issues explicitly identified in EPA's charge questions to the NEJAC. Therefore, we emphasize here that equity, justice, and the effective regulation of pesticides require the following overarching reforms.

1. Every aspect of EPA's pesticide program must take into account the social conditions in which pesticides are used in agricultural workplaces.

Employers regularly violate labor and pesticide laws and regulations (see details under Charge Question 4, below). The pervasiveness of these violations stems from certain socioeconomic factors of U.S. agriculture. Various factors compel employers to use high rates of pesticides and to violate labor and pesticide regulations:

- farmers tend to work under tight profit margins;
- they receive most of their advice about pesticides from pest control advisors, who are paid by pesticide manufacturers so encourage farmers to use high rates of pesticides;
- farmers must meet strict cosmetic standards for farm products to receive high prices for their products, so they use extra pesticides to prevent blemishes on produce; and
- farmers face only minor repercussions for violating pesticide and labor laws.

At the same time, various factors undermine farmworkers' abilities to demand safe working environments, report pesticide exposures or other regulatory violations, and have their claims taken seriously. These include:

- high rates of undocumented status among farmworkers;
- high competition for farm jobs;
- low wages;
- debts incurred from migration; and
- widespread racism against Latinx people and other people of color by employers, agricultural officials, police, health care providers, and others.

Many of these factors are beyond EPA's control. However, justice requires that regulatory agencies factor these contexts and circumstances into the regulation of pesticides—including in research, risk assessment, rulemaking and other risk mitigation, and compliance and enforcement—and, accordingly, regulate toxic pesticides much more stringently than is currently done. EPA and other regulatory agencies have not adequately taken these social contexts into account, which has long undermined their pesticide programs' abilities to protect farmworkers and their families from pesticide exposure.

Regulating pesticides more effectively will include augmenting traditional risk assessment with cumulative impact assessment and alternatives assessment, so that every pesticide is evaluated not in isolation but in light of the other chemical and non-chemical stressors to which farmworkers and

others are actually exposed and in light of available, less-toxic alternatives.²² Most farmworkers are not exposed to one pesticide alone. Growers most often use several pesticides in a growing season, within one week, and even at once. Farmworkers are exposed to pesticides applied at their own workplace and in nearby fields. There has been inadequate research on the health consequences of exposure to various chemical pesticides, including other chemicals, within a short time period. Pesticides have varying half-lives, and for some pesticides the metabolites can be more toxic than the original pesticide itself. These raise significant questions and concerns about the synergistic, additive, and cumulative effects of these exposures, which are very problematic for adults, and can have a multiplier effect on children during particular periods of childhood development. These complex exposures can impact their future reproductive health and affect the health of their offspring. To not understand these issues is tantamount to offering up farmworker children as experiments in exposures to combinations of pesticides.²³

To not understand complex exposures is tantamount to offering up farmworker children as experiments in exposures to combinations of pesticides.

2. EPA should implement tighter restrictions on the use of toxic pesticides.

Pesticide use regulations are not stringent enough to protect human health, as evidenced by environmental monitoring studies, epidemiological studies, reported pesticide illnesses, farmworkers' other firsthand accounts, and other data. In its risk assessments, EPA must take these data more seriously than it has in the past. Following the precautionary principle, EPA should restrict the use of pesticides known or likely to pose significant harm to human health, even in the face of scientific disagreement.²⁴ These restrictions should also include alternatives assessment; namely, EPA should cancel pesticide uses for which alternative, less-toxic pest management methods exist. These restrictions should also include buffer zones around schools, daycare centers, homes, and other sensitive sites. Also needed are more stringent, enforceable restrictions on the timing of applications, environmental conditions of applications (e.g., wind speeds), and bilingual notifications via social media popular among farmworkers and their families about upcoming pesticide applications, including the name of the pesticide and its known toxicities.

Furthermore, EPA must accelerate and make more health-protective its process of registration review for the most toxic and drift-prone pesticides. Certain groups of pesticides—notably,

22. The Agency's authority to consider and address cumulative impacts in its pesticide programs is specified in "EPA Legal Tools to Advance Environmental Justice: Cumulative Impacts Addendum," Office of General Counsel, U.S. Environmental Protection Agency, 2023.

23. The NEJAC will be expanding on this in its forthcoming report on Cumulative Impacts.

24. Donley et al., *Pesticides and Environmental Injustice*; Harrison, *Pesticide Drift*.

organophosphates and soil fumigants—are particularly overdue for regulatory restriction given their known acute health effects, known and suspected contributions to serious chronic illnesses, and propensities to drift offsite. The careful registration review and regulatory restriction becomes more urgent as climate change increases the frequency with which farmworkers work on days of extreme heat, which reduces the efficacy of PPE.²⁵ This is especially the case for chlorpyrifos, given its known contributions to cognitive impairment in children and other chronic health effects, which compelled the Agency to revoke all chlorpyrifos tolerances in 2021. Although legal challenges revoked EPA’s ban on some uses of chlorpyrifos on food crops in 2023, the EPA has not reinstated that ban to the full extent possible. Despite this, the White House still lists the EPA chlorpyrifos ban first on its list of EJ reforms.²⁶ Justice requires that the Agency cancel the use of this highly toxic pesticide on food crops.²⁷ EPA must strengthen restrictions on the use of this and other highly toxic pesticides—and not weaken existing regulations, as the Agency may be doing with regard to acephate.²⁸

In the case of chlorpyrifos, as with other pesticides, EPA should not use new approach methodologies, or NAMs, to weaken restrictions on toxic pesticides. These methodologies are not sufficiently tested to supersede conclusions drawn from more robust and health-protective assessment methodologies.

Another category of pesticides that need careful re-evaluation are those with PFAS active ingredients, given that they are understudied and persist in the environment.²⁹

We applaud the Agency for its recent commitment to more fully assess the risks that pesticides pose to endocrine system disruption in humans.³⁰ This is a significant type of impact that has been poorly accounted for in pesticide risk assessments to date.

EPA should strengthen the standard for regulating occupational pesticide exposures by bringing it into line with the more stringent standard it uses for regulating non-occupational pesticide exposures per the Food Quality Protection Act.³¹ This double standard is scientifically unjustified, as EPA has recognized.³² Additionally, given that occupational exposures overwhelmingly disproportionately burden immigrant farmworkers, EPA’s double standard is discriminatory and violates Title VI of the Civil Rights Act.

25. For instance, see Ismaniza Ismail et al., “Organophosphorus Pesticide Exposure in Agriculture: Effects of Temperature, Ultraviolet Light and Abrasion on PVC Gloves,” *Industrial Health* 56, no. 2 (2018): 166–170; Leigh Thredgold et al., “Exposure of Agriculture Workers to Pesticides: The Effect of Heat on Protective Glove Performance and Skin Exposure to Dichlorvos,” *International Journal of Environmental Research and Public Health* 16, no. 23 (2019): 4798.

26. White House, “Environmental Justice,” <https://www.whitehouse.gov/environmentaljustice/>.

27. Earthjustice, Letter to EPA Administrator Michael Regan, “Reinstating Chlorpyrifos Tolerance Revocation Rule,” November 28, 2023; see also Evan S. Baker, Kyle J. Moon, and Rachel C. Branco, “Chlorpyrifos: Who Paid and Who Profited?” *Environmental Justice* 17, no. 1 (2004).

28. Sharon Lerner, “10 Times as Much of This Toxic Pesticide Could End Up on Your Tomatoes and Celery Under a New EPA Proposal,” ProPublica, April 24, 2024, <https://www.propublica.org/article/epa-acephate-pesticide-adhd-autism-regulations>.

29. Diogo A.M. Alexandrino et al., “Revisiting Pesticide Pollution: The Case of Fluorinated Pesticides,” *Environmental Pollution* 292, part A (2022): 118315.

30. Environmental Protection Agency (EPA), “Endocrine Disruptor Screening Program (EDSP); Near-Term Strategies for Implementation; Notice of Availability and Request for Comment” *Federal Register*, October 27, 2023.

31. Donley et al., *Pesticides and Environmental Injustice*.

32. U.S. EPA. Revised Risk Assessment Methods for Workers, Children of Workers in Agricultural Fields, and Pesticides with No Food Uses 2009.

3. Agencies must conduct much more pesticide monitoring within and beyond agricultural fields.

Agencies currently conduct so little monitoring that they effectively do not know how well existing pesticide regulations work. This must include air monitoring near application sites and biomonitoring of farmworkers, while carefully protecting the identity of individuals participating in biomonitoring studies.

4. Agencies must hold employers and other pesticide applicators more accountable for complying with existing laws and regulations.

As independent researchers have recently documented, various types of data indicate that noncompliance with the WPS is extremely common and that violators typically receive only warnings.³³ Holding pesticide users accountable includes conducting more frequent unannounced inspections, investigating reported pesticide exposures and regulatory violations much more quickly than is currently done, and ensuring more serious repercussions for those who violate regulations, especially for those in positions of power and authority. Holding employers accountable also requires levying stringent penalties for pesticide violations without regard to whether the user violated those regulations “willfully” or unknowingly; some state pesticide laws specify that agencies cannot assess penalties against those who claim ignorance of the laws in question.³⁴

5. Congress should authorize changes in labor regulations and pass legislation to create new protections for farmworkers and expand farmworkers’ rights.

Farmworkers are exempted from several major provisions of the National Labor Relations Act and the Fair Labor Standards Act, so they do not receive the same protections that other workers have achieved in this country. These exemptions should be eliminated. Notably, farmworkers must be given the right to minimum wages, overtime pay, and collective bargaining equal to those of workers in other sectors, and children should be protected from hazardous agricultural work on par with other sectors. The exclusion of farmworkers from key labor laws is racist and traps farmworkers in poverty. Lacking protections, farmworkers are afraid to complain about pesticide exposures and workplace regulatory violations, which inhibits the effectiveness of pesticide regulations. The exclusion of agriculture from child labor protections extended to all other economic sectors is similarly racist and subjects children to hazardous agricultural working conditions.

The exclusion of farmworkers from key labor laws
is racist and traps farmworkers in poverty.

33. Donley et al., *Pesticides and Environmental Injustice*, see Table 1 and associated text; Scott and Norton, *Precarious Protection: Analyzing Compliance with Pesticide Regulations for Farmworker Safety*, 2023.

34. Kristin Collins, “Judge Faults Case against Ag-Mart,” *Raleigh News & Observer*, October 9, 2007.

6. EPA leadership and staff need to acknowledge the shortcomings of pesticide laws, regulations, enforcement, and programs.

In the past, EPA staff have sometimes responded defensively to reasonable questions about the focus and effectiveness of existing regulatory practices. Defensiveness makes it difficult to have open conversation about difficult subjects such as these. Openness is important for improving EPA's work. We sincerely appreciate the Agency's efforts to increase such open communication and look forward to more of that moving forward.

7. EPA should work with partner agencies to improve health care in rural communities so that farmworkers have access to quality health care by staff who understand how to monitor for and respond to cases of pesticide exposure.

Medical health professionals often dismiss or misdiagnose reports of pesticide exposure, misunderstand immigrant farmworkers' concerns due to language barriers, do not attribute their symptoms to pesticide exposure, and so do not report these exposures.³⁵ Most clinics, health care providers, and hospitals do not take an occupational health history nor ask questions about the patient's occupational conditions or risks. In addition, very few providers have any training or knowledge about pesticide poisoning, pesticide exposure, or the circumstances of agricultural pesticide use. Because EPA learns about such shortcomings through its pesticide enforcement work, it is in an important position to inform other agencies about how such systems need to be improved.

EPA needs to work with other agencies to train health care professionals to ask about patients' workplaces and exposure histories and to more effectively test for, diagnose, treat, and report suspected pesticide exposures and pesticide-related illness, including specific guidance about children and women. Such collaborations include the Health Resource and Service Administration's (HRSA) Health Center Program. HRSA funding can be used for partnerships between medical centers and legal organizations; this model should be encouraged and facilitated to help workers make informed reports and to substantiate reports of pesticide exposure. Another excellent resource is the Migrant Clinicians Network.

Rural health clinics need greater funding for pesticide-related illness training. Currently, farmworkers using these such clinics face long wait periods to get an appointment, and the staff at the health centers are overwhelmed and hurried. Funding would enable health clinic directors to prioritize pesticide-related illness training for health providers and clients, akin to the federal government's recent provision of funding to health clinics for smoking cessation programming that enabled clinics to make that issue a priority.

EPA needs to find a way to sever cooperation between employers and clinics that create conflicts of interest. Employers often have an agreement with certain clinics and doctors to provide farmworkers with medical care. Because the doctor works closely with employers and the farm to avoid Workers

35. As indicated by EPA, "Request for Stakeholder Input on the Proposed Design of a New Grant Program Regarding the Health Care Provider (HCP) Training Program," *Federal Register*, September 9, 2023; see also Margaret Reeves and Kristin S. Schafer, "Greater Risks, Fewer Rights: U.S. Farmworkers and Pesticides," *International Journal of Occupational and Environmental Health* 9, no. 1 (2003): 30–39.

Compensation costs to the employer, these clinics often do not attribute workers' illnesses to pesticides or other workplace causes.

EPA should regularly and proactively share pesticide illness data with the EPA-funded Health Care Provider training program to help that program continually update its trainings.

8. EPA should ensure greater accountability for implementation of WPS.

Because the inspection process is conducted through the state lead agencies (SLAs), EPA should enact policies for SLAs on conducting inspections and work more closely with EPA Regional offices to work with the SLAs in their region.

Given the cross-agency nature of some of these recommendations, EPA should take the lead on working with other agencies to implement these recommendations and should also work with the White House Environmental Justice Advisory Council to get their advice on other agencies' roles in implementing these recommendations.

Charge Question 1. Establishing Farmworkers' Access to Bilingual (Spanish) Labels

By 2025, the Agency must develop an implementation plan with effective approaches for increasing farmworkers' access and use of labels with Spanish translations. EPA requests the NEJAC help the Agency focus on how to establish access of bilingual Spanish labels (e.g., paper labels or electronic method) for farmworkers in a meaningful manner. EPA is open to learning about on-the-ground communications techniques and practices to make a meaningful impact in farmworker communities. (For full text of charge, see <https://www.epa.gov/system/files/documents/2023-11/farmworker-and-pesticides-charge-questions-to-the-nejac-03.30.23.pdf>).

Charge Questions:

- A. What communications approaches, processes, or strategies would the NEJAC recommend for ensuring Spanish labels are accessible to farmworkers? What specific approaches should the Agency avoid when implementing efforts to ensure farmworkers' access to Spanish labels?
- B. What technologies, mobile applications, and internet access should the Agency consider? Would web-based labels be accessible to farmworkers? Does limited internet access provide a significant barrier?
- C. How can the Agency effectively share information with farmworkers? What should on-the ground logistics look like? What partners should the Agency work with?
- D. What components should the Agency have within the implementation plan to increase farmworkers' access to bilingual (Spanish) labels?
- E. Beyond the Spanish language requirements in PRIA 5, the Agency is interested in learning how to improve fundamental access of labeling to farmworkers speaking non-English languages other than Spanish. What additional recommendations does the NEJAC have to improve access to these workers?

Farmworkers want more training about pesticides so they can better protect themselves.³⁶ Farmworkers, their advocates, and scholars have long emphasized that making information available in Spanish is critical to educating farmworkers about pesticides, given that the majority of farmworkers in U.S. agriculture are Spanish speaking. We commend EPA for implementing these regulations and for requesting the NEJAC's feedback on how best to do so.

Conveying this information to workers will require a multi-pronged approach, given that farms, employers, and farmworkers are highly diverse in terms of language skills, internet access, and technological savviness. Some farmers and workers are experienced with smartphones, internet, QR codes, mobile apps, and social media, whereas others are not. Below, we recommend numerous ways that agencies can more effectively share pesticide information with farmworkers.

Educating farmworkers about pesticides is important and must be improved in ways we recommend below. That said, education is just one part of what is required to effectively protect farmworker

36. Hyland et al., "Examination of Urinary Pesticide Concentrations."

health from pesticide exposure, given the many structural factors that allow farmers to apply high rates of dangerous pesticides, compel farmers to use dangerous chemicals and often violate pesticide and labor regulations, and render most pesticide exposures and illnesses invisible to regulatory agencies.

1. Conduct additional outreach to determine how best to implement these regulations.

EPA has already been conducting some valuable outreach on these regulations, including through its webinars and by requesting feedback from the NEJAC. In the August meeting of the EPA Farmworker Stakeholders, an EPA pesticide program senior manager stated that webinars take considerable effort from EPA and are a reasonable way to collect farmworker input. Although we appreciate the effort EPA has put into its webinars, we disagree that webinars are an adequate way to collect input. Webinars are not effective ways to communicate with people who do not spend their time in video conference calls, who work during the day, who do not have reliable phone and internet access, who have very good reasons to not trust government agencies, and who may have limited English language skills. The following additional efforts are essential for making EPA outreach more effective.

First, pay organizations that have earned the trust of farmworkers to conduct focus groups with farmworkers to learn what will work best for them. Do this in multiple regions characterized by different farmworker demographics, commodity sectors, and types of farm jobs. Focus group participants generate better and richer ideas in conversation with one another, especially when discussion is facilitated by multi-lingual organizations that the participants trust.

Second, hire farmworker organizations to pilot outreach practices with farmworkers before EPA finalizes and implements those practices. Do this in multiple regions characterized by different farmworker demographics, commodity sectors, and types of farm jobs.

Third, hire farmworker organizations to collect farmworker input about educational materials and practices to evaluate how well they are working. Do this in multiple regions characterized by varying farmworker demographics, commodity sectors, and types of farm jobs.

Finally, in all of these outreach practices, offer compensation (such as gift cards) to participating farmworkers.

EPA must honor and apply the input it receives from farmworkers and farmworker organizations about what will work; otherwise, it will be wasting considerable time and other resources. For instance, farmworker advocates shared that a recent pesticide educational poster (see figure 1) does not reflect the suggestions that farmworkers had shared about it when it was being drafted, and that as a result, the poster is ineffective.

Although there are not enough farmworker organizations to cover the entire country, this support could help these groups expand their reach. Grassroots farmworkers groups have the trust of the community, whereas inspectors and employers generally do not.

Figure 1. Limitations of Widely Used Pesticide Educational Materials

Farmworkers want training about pesticides so they can better protect themselves, but even when farmworkers are fully informed, they are exposed to dangerous levels of toxic pesticides. Justice requires that we do not frame the pesticide problem solely as one of a farmworker information deficit.

Farmworkers are exposed to pesticides applied at their own workplace and in nearby fields. Despite this poster's advice, farmworkers are frequently not notified of nearby pesticide application in advance. Notably, one of the most common WPS violations is not properly posting re-entry interval restrictions.

40 CFR 170.311 requires that pesticide safety information convey certain points "in a manner that workers and handlers can understand." In the past, the code required content to convey that "there are Federal rules to protect workers and handlers, including a requirement for safety training." But that point has not been required since 2018.

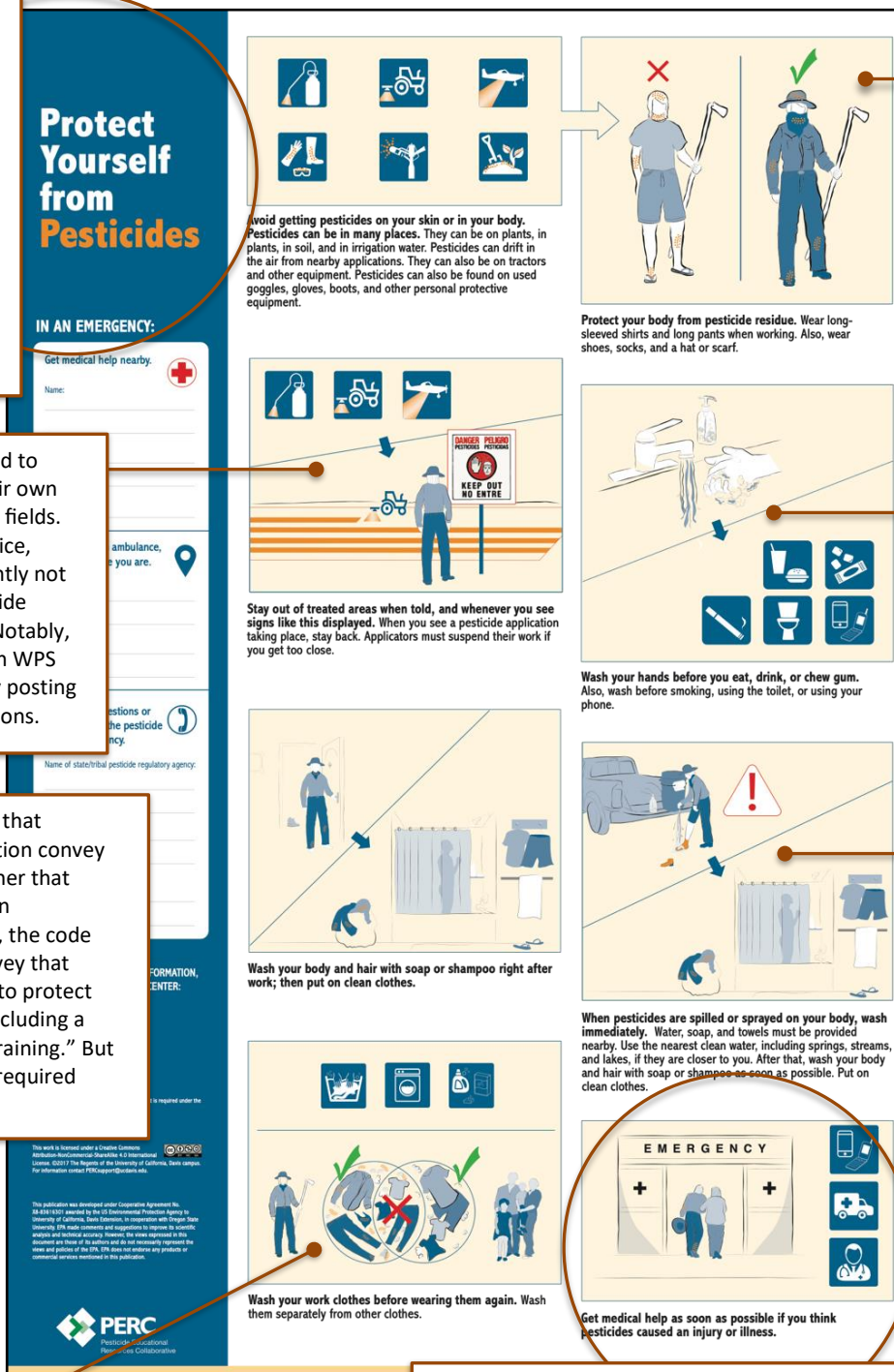
Farmworkers' low wages mean that they have less access to washing machines, and that there is less time for family members to wash all of their clothing. Moreover, household washing machines may not adequately remove pesticide residues from clothing.

Farmworkers often do not seek medical care when exposed to pesticides because they cannot afford the fees, cannot afford to take time off of work, think the symptoms will go away on their own, or are afraid that the doctor will inform the worker's employer that the worker was concerned about pesticide exposure—which has happened and for which employers have retaliated against workers. In addition, very few providers have any training or knowledge about pesticide poisoning, pesticide exposure, or the circumstances of agricultural pesticide use.

Growers typically use several pesticides in a growing season, within a week, or even at once. This raises significant questions and concerns about the synergistic, additive, and cumulative effects of these exposures, which are very problematic for adults, and can have a multiplier effect on children during particular periods of childhood development.

Workers are encouraged to wash their hands, but many have no reasonable access to clean water in the field. Employers often do not provide soap at wash and decontamination stations except when WPS inspectors visit.

Despite the requirement that pesticide information be understandable, many farmworker focus group feedback indicated that this poster's graphics, such as these images about showering, were incomprehensible without text.



Pesticides? Call 1-800-...

2. Make the language of pesticide informational materials as accessible as possible.

Pesticide labels in English tend to be technical, densely written documents and thus inaccessible to those without technical expertise and literacy skills. The following strategies will increase accessibility.

Instructions to employers need to clearly define what it means to make materials “accessible” to workers. Accessibility includes physical location, but it also requires formats that are inclusive to workers who speak different languages and have varying degrees of reading skills. Accessibility is not met simply by placing a hard-copy manual in a central location. Making pesticide information accessible to workers requires making materials available in multiple languages based on the primary languages spoken by workers in any given location. Accessibility in this case also requires that the content be understandable by those with limited literacy. Farmworkers and farming contexts are diverse, so no single product is going to effectively reach all people and in all situations.

Pesticide informational materials should include pictures, infographics, diagrams, or other visuals. This might include developing something akin to the hazard cards or safety cards used in other sectors, which have standardized formats that summarize information. Pictures could be arranged like a comic book (or *fotonovela*, commonly used in Spanish-speaking communities) to explain instructions on how farmworkers can protect themselves and their right. The product should include a variety of ways for readers to get more information in a number of languages. Key words like “poison,” “toxicity,” and “death” should be highlighted and apparent. The pesticide labels themselves should include the phone number and email for the National Pesticide Information Center.

This will necessitate amending the regulations that require outreach and educational posters to make numerous specific points. EPA staff lamented that regulations (40 CFR 170.311) require pieces of specific information to be included on pesticide information materials, which, according to EPA staff, preclude them from creating accessible informational materials. EPA should have an open comment period about revising these regulations, and EPA staff producing or overseeing the production of pesticide safety materials should have training on the requirements.

Content could also be made accessible via scannable QR codes that link to Spanish-language audio or video formats. Employers should provide hard copies of the pesticide label QR codes so that farmworkers can take it with them to access information in private, since workers could be shamed or retaliated against for consulting such information in the workplace. Many rural areas lack sufficient internet connectivity; therefore, EPA should not rely solely on the internet to communicate information to farmworkers.

EPA should investigate the possibility of using text messages to communicate information to workers and/or developing a mobile application that workers can download where they have internet access and later consult offline. These mechanisms would be especially useful to workers in areas with limited internet connection. EPA and other agencies could work with local farmworker, church, and social service organizations to send text messages to their clients. Workers could opt in to receive these text messages or updates from an app.

Other mobile apps have been developed to help farmworkers protect themselves from pesticides.³⁷ Agencies should familiarize themselves with these technologies and consider integrating the new Spanish-language label information into these existing apps.

Workers should have the right to access information about pesticide and labor laws on their phones during work hours.

Workers must be allowed to take pictures of pesticide signage information and pesticide containers with their phones so that they can refer to that information later. Currently, workers are often prohibited from taking photographs in the workplace, which greatly undermines their abilities to protect themselves and to have accurate information to share with their health care providers.

3. Share Spanish-language pesticide information in multiple venues and situations within and beyond job sites.

It makes sense to post pesticide information near a timeclock that workers use to clock in and out. However, on some farms, workers are now required to clock in and out in the field using an app on their cell phone. In this case, pesticide information will need to be placed at the job site parking areas, in the field, or in other areas that farmworkers commonly visit, such as hand washing stations, portable toilets, or bathrooms.

Pesticide safety information should be conveyed on large pesticide containers and also on all smaller containers used to transport, mix, and apply pesticides.

Posters with re-entry interval information and other pesticide safety information should be placed at the field edge, which would allow farmworkers who are being instructed to enter a field that has recently been sprayed to confirm whether they should be entering that field. These signs must be removed when the re-entry interval has ended. The notice should include the QR code or other information source that workers can access with their phones to find the name of the pesticide that was used as well as precautions and other protective information for that pesticide. Such posters should be available free of charge from EPA regional offices and other agencies. Currently, people must purchase them.

More general information about worker rights and how to report concerns should be posted in buses that transport workers to and from the fields, parking areas, stores where workers tend to shop, churches, *mercados* (stores catering to Latinx communities), health clinics, community centers, legal services centers, and laundromats. For workers with H-2A (temporary agriculture) visas, posting the information in the shared employer-provided housing in a very visible and central area is important, as well.

37. See, for instance: Shedra A. Snipes et al., “User Perceptions of ¡Protéjase!: An Intervention Designed to Increase Protective Equipment Use Among Mexican Immigrant and Mexican American Farmworkers,” *JMIR mHealth and uHealth* 4, no. 2, (2016); also Shedra A. Snipes et al., “Provision Increases Reported PPE Use for Mexican Immigrant Farmworkers: An Mhealth Pilot Study,” *Journal of Occupational and Environmental Medicine* 57, no. 12 (2015): 1343–1346.

Pesticide information should be shared during the annual WPS trainings to farmworkers in a manner that is interactive and culturally and linguistically appropriate. (Below, we recommend other ways WPS trainings could be strengthened.)

Finally, EPA should conduct or support education or awareness campaigns about reporting pesticide violations. To successfully reach a variety of youth and adult audiences, EPA should collaborate with Indigenous and Spanish-language communication firms and local nonprofit organizations to ensure that campaigns and announcements are designed using proven strategic communication practices. Campaigns could be disseminated through mass media outlets most trusted by target audiences. These include Spanish language radio in rural, agricultural areas, including those broadcasting in Indigenous languages common among farmworkers in many regions. Each campaign should be evaluated for effectiveness and its lessons shared. EPA could further support pesticide education and awareness by working with local farmworker organizations and Spanish-language communication firms to develop free, downloadable, evidence-based communication toolkits to help local organizations disseminate messages of special relevance to their local communities.

4. Require updated information to be shared in an expedient fashion.

Often, employers do not share new information with workers. When new information is available, such as pesticide label information in Spanish, employers should be required to share that information with the farmworkers immediately, including through posting in the workplaces' central posting areas.

5. Collaborate with other organizations, such as U.S. Department of Agriculture, to expand broadband internet connectivity in rural areas.

This is important given that much information is conveyed on the internet.

6. Improve annual WPS trainings of farmworkers.

Trainings. Trainings must be tailored to all groups of workers (including children) who work in agriculture. This includes ensuring that trainings are culturally and linguistically appropriate for specific communities. Most farmworkers are native Spanish speakers. Farmworkers have shared with us that the trainings they receive are incomprehensible; they are conducted by people who speak almost no Spanish, give workers materials written in English, and then instruct the workers to sign a card that they received training. This is not training; it is a deplorable mockery of what adequate training requires. Many communities primarily speak languages other than Spanish and English. As we note under Charge Question 3 below, EPA should create a special WPS training geared toward children.

Content. WPS training content needs to be tailored to the unique circumstances of each farm, addressing critical aspects such as the location of decontamination supplies, central posting areas, and farm-specific procedures. Trainings should also provide resources about farmworkers' rights (e.g., right to know, their right to make a complaint); how farmworkers can report violations of pesticide laws; and how they can escalate a complaint if the primary authority has not responded or has not responded adequately. Also, workers should be trained to report any exposure they experience as soon as possible. Sometimes the worker does not report an exposure for several weeks or more, which makes the investigation more difficult, and sometimes the enforcement agency may not consider it a valid complaint.

Farmworkers have shared with us that the trainings they receive are incomprehensible; they are conducted by people who speak almost no Spanish, give workers materials written in English, and then instruct the workers to sign a card that they received training.

Engagement. To be effective, trainings should be engaging and interactive. Often, trainers just play a video without customizing it to the specific conditions and requirements of the farm. Making the training relevant to the workers, such as by using real-life examples, is essential to maintaining engagement and achieving its goals. Training should incorporate images and interactive elements to ensure people can relate to the content, engage with it, and genuinely comprehend it. WPS training can draw from the traditions of popular education in Central and South America, where the trainers engage participants by introducing issues through skits rather than asking participants to share their personal experiences as topics of discussion. Utilizing skits as a way to approach pesticide issues offers a safe and effective way to initiate dialogue and build trust within the community. Popular education builds upon the existing knowledge of workers; instead of simply imparting information, it seeks to tap into what workers already know. WPS training sessions should aim to create a welcoming atmosphere where workers feel comfortable, eliminating any potential embarrassment and fostering trust among participants.

Settings. Trainings should be conducted in settings that effectively enable workers to focus and learn. Avoid conducting training sessions in noisy environments with tractors or other disturbances. Consider whether training could be conducted in settings in which workers would feel especially comfortable, such as workplaces, homes, or schools.

Compensation. Workers should be compensated for attending WPS trainings. The trainer should inform the farmworkers and confirm with the owner that the workers are compensated for their time.

Evaluation of worker understanding. Agencies should hire farmworker advocates to develop culturally sensitive, non-intimidating, quick ways to assess whether workers have learned key content from the trainings. Such assessments need not be resource-intensive; they could be conducted of a sample of workers at any worksite.

Evaluation of training impact on pesticide exposures. EPA should evaluate whether trainings reduce the incidence of pesticide exposure. No research has ever been done to test whether training farmworkers actually affects rates of pesticide exposure.

Training the trainers. Ensure that WPS trainers are adequately trained. Trainers should be required to retrain every five years at minimum, rather than receiving lifetime certification, which dissuades trainers from learning about new chemicals, application methods, laws, and patterns. Also, consider establishing a system in which trainers doing exemplary work accumulate points based on their performance. This would determine the frequency of renewing their licenses and updating their credentials.

Certification. Create opportunities for workers to get trained regularly and receive certifications for doing so to help them demonstrate their investments in training.

Charge Question 2. OCSPP: Input on Building a New Environmental Justice Indicator

EPA has worked to identify existing datasets that could be leveraged to develop an indicator related to farmworkers. While many datasets were identified, all have significant limitations. EPA requests that the NEJAC share ideas on significant issues that the Agency should consider for the indicator as well as input on available data and recommendations for data analysis.

Charge Questions:

- A. Which types of indicators would be most meaningful to farmworker communities? Please see the Farmworker Disparity Indicator Examples below for different types of indicators.
- B. Which types of environmental/health issues are most urgent to farmworker communities and could be tracked through this effort? How can the Agency analyze certain disparities related to these environmental/health issues?
- C. What datasets are missing from the list below that would be helpful to consider (even if not available nationwide)? What are your recommendations on how to best leverage/combine existing datasets?
- D. Given the limitations of existing datasets, what are the most pressing data gaps that could be addressed for development of a future indicator? How does the NEJAC recommend that these data gaps be filled?
- E. Disparities are frequently measured between groups; however, disparities can also be measured from other reference points such as the total population. The choice of a reference point from which to measure disparity is a critical issue, especially considering the demographics of farmworkers. Which approaches do you recommend in identifying an appropriate comparison group that captures farmworker disparities? For more context, reference: [Methodological Issues in Measuring Health Disparities.](#)

It is important that government agencies assess their effectiveness. Historically, EPA has tracked its progress in terms of specific pollutants aggregated across the nation or other large-scale geographic areas.³⁸ However, as environmental justice advocates have long emphasized, such measures obscure significant geographic inequalities in those hazards; pollution levels in some communities often greatly exceed levels of health concern. Moreover, EPA has not historically measured its progress in terms of demographic inequalities in exposure to environmental hazards, such as, notably, along lines of race and Indigenous status. Therefore, we applaud the Agency for committing in its current strategic plan to establishing indicators that assess EPA's performance in reducing disparities in environmental and public health conditions.

The NEJAC appreciates EPA's request for our input into developing indicators relevant to farmworkers. Fully answering this set of charge questions would require familiarity with and a careful review of existing datasets, which are beyond the scope of the NEJAC's responsibility and resources.

38. Jill Lindsey Harrison, *From the Inside Out: The Fight for Environmental Justice within Government Agencies* (Cambridge, MA: MIT Press, 2019): 157–161; Jill Lindsey Harrison, "Neoliberal Environmental Justice: Mainstream Ideas of Justice in Political Conflict over Agricultural Pesticides in the United States," *Environmental Politics* 23, no. 4 (2014): 650–669.

Therefore, we focus our response on offering a few suggestions for indicators that would help EPA assess its performance in ways that are meaningful to farmworkers. The EPA will need to work with its Science Advisory Board and others to determine which existing datasets can be drawn on, and which new datasets will need to be created, to implement these indicators.

The following indicators would enable EPA to assess its performance in ways that more meaningfully address the experiences of farmworkers:

1. Diseases and disorders associated with pesticide exposure

- **Childhood asthma rates.** Disparities in childhood asthma between farmworking children and the general population.
- **Cancer rates.** Disparities in cancer rates between farmworkers (including former farmworkers) and the general population.
- **Birth defect rates.** Disparities in birth defect rates between children of farmworkers and the general population.
- **Others.** Disparities in rates of learning disorders, autism spectrum disorders, and other developmental disorders between children of farmworkers and the general population.

2. Reported pesticide illnesses

- Number of reported pesticide illnesses annually.
- Disparities in pesticide illnesses between farmworkers and the general population.
- Racial disparities in pesticide illnesses.

Collecting these data will require developing an improved national-level pesticide illness surveillance program. EPA recently made public 10 years' worth of data from its pesticide Incident Data System.³⁹ This transparency is commendable, as such data are important for identifying pesticide regulations that need to be strengthened. However, this system needs improvement to better serve the Agency's responsibilities and to protect public health. EPA should consult with farmworker advocates, researchers, and peers from the National Institute for Occupational Safety and Health (NIOSH) regarding improving EPA's pesticide Incident Data System, improving other related systems (including NIOSH's SENSOR Pesticide Surveillance System and the National Poison Data System), determining how these systems can be integrated, and determining how EPA, other regulatory agencies, and Congress can draw lessons from these to better protect public health.

3. Pesticide use

Reduced use of the most toxic and drift-prone pesticide annually, by state and nationally. This will require creating an improved pesticide use reporting system.

4. Resources devoted to WPS inspections and inspectors

- Increasing number of WPS inspections per farming operation conducted in each state annually.
- Increasing number of inspectors per farming operation in each state.
- Increasing percentage of inspectors who speak Spanish.

39. EPA, "EPA Posts Pesticide Incident Data Publicly," news release, U.S. Environmental Protection Agency, July 27, 2023.

5. Stringency of pesticide enforcement

- Increasing number of penalties for repeat (i.e., not first-time) violations.
- Increasing portion of penalties that meet the maximum penalty amounts.

6. Pesticide monitoring studies

- Increasing number of air monitoring studies for applications of the most toxic and drift-prone pesticides.
- Increasing number of studies of farmworker exposure to pesticides that pose the greatest risks to farmworker health (biomonitoring and/or other monitoring, such as wristbands, as appropriate for the pesticide in question).
- Changes in pesticide monitoring study results. How do the study findings (in terms of farmworker exposure to pesticides) compare across time?

Charge Question 3. OCSPP: Strengthening EPA’s Pesticide Exposure Assessment of Legally Working Children in Agriculture

The Agency request that the NEJAC share quantitative information, research, and monitoring data; as well as factors to be considered for informing the analysis with additional or current information, related to legally working children in agriculture.

Charge Questions:

A. Is the NEJAC aware of additional exposure data to augment our analysis of comparative exposures between adult and children in agricultural settings?

B. Can the NEJAC provide quantitative data and sources of information, in addition to the Department of Labor data used in the analysis, to inform these types of exposures and activities that are expected for children legally working in agriculture?

C. The Agency currently relies upon the Exposure Factors Handbook for biometric data (i.e., body weights, surface area) for the general U.S. populations. Can the NEJAC provide additional data to reflect biometric differences amongst farmworker children populations in comparison to the general population?

In the United States, children as young as 12 years of age can be hired to work on farms, though farmworker organizations report children as young as 10 being hired. Investigative reporters have found children doing dangerous farm jobs they are not authorized to fill and are sometimes injured in that work.⁴⁰ Children working in agriculture are not always just working a few hours here and there. In one study of children aged 10–17 working in North Carolina, 30% of children interviewed worked six or seven days per week, and 34% worked more than 40 hours per week.⁴¹ Although most of the children in that study work during summer break, 25% of them also worked during the fall and spring school semesters and during school holidays. We applaud EPA’s attention to the conditions youth face when working in agriculture and how those affect their exposure to pesticides.⁴² We also applaud EPA for helping to fund research on the impacts of chemical and non-chemical stressors on children’s health.⁴³

Substantial research has established that children are not just smaller-sized versions of adults. Rather, childhood is a special life stage in which people are vulnerable to harm from exposure to chemicals

40. Hannah Dreier, "They’re Paid Billions to Root Out Child Labor in the U.S. Why Do They Fail?" *New York Times*, December 28, 2023; Hannah Dreier, "Confronted with Child Labor in the U.S., Companies Move to Crack Down," *New York Times*, February 7, 2024.

41. Thomas A. Arcury et al., "Latinx Child Farmworkers in North Carolina: Study Design and Participant Baseline Characteristics," *American Journal of Industrial Medicine* 62, no. 2 (2019): 156–167.

42. See also Association of Farmworker Opportunity Programs’ "Children in the Fields" reports, program, and work. <https://afop.org/cif/> and <https://afop.org/pesticides-safety-for-children/>.

43. U.S. EPA, "EPA Awards \$3.8M in Research Grants to Establish Research Centers to Address Children’s Health in Underserved, Rural Agricultural Communities," news release, U.S. Environmental Protection Agency, October 16, 2023.

in ways that adults do not experience.⁴⁴ Additionally, although some studies have shown that children’s exposures to pesticides are lower than those of adults, the Children’s Health Protection Advisory Committee (CHPAC) has detailed many limitations of those studies and good reasons to not assume that this is always the case.⁴⁵ Among the many other points CHPAC made in their report, youth tend to take greater risks than adults, are often less worried about the effects of exposure to chemicals, and have less control over working conditions than adults; they are therefore likely to be more exposed to pesticides and less likely to speak up about unsafe working conditions. Indeed, other research has shown that children working on farms experience higher rates of injury and death than do adults who work on farms.⁴⁶

Children working on farms experience heat-related illness and other workplace hazards, which increases their vulnerability to harm from pesticide exposure.⁴⁷ One study found that the majority of farmworking children did not receive any safety training, did not feel that they had control over their own safety in the workplace, did not receive safety equipment, and were not informed about dangerous work practices.⁴⁸ Although the minimum age for handling and applying pesticides is now 18 years old, the reality is that youth can be asked or required to handle and even apply pesticides, such as when there are worker shortages or pressure to get a job done quickly.

One study found that the majority of farmworking children did not receive any safety training, did not feel that they had control over their own safety in the workplace, did not receive safety equipment, and were not informed about dangerous work practices.

Although we appreciate EPA’s interest in this important topic, this charge question consists of highly technical questions that require a thorough review of the scientific literature, which is beyond the scope of the NEJAC’s responsibility and resources. Additionally, the highly technical wording of these questions undermines community participation in this discussion and precludes consideration of

44. L. Mott, “The Disproportionate Impact of Environmental Health Threats on Children of Color,” *Environmental Health Perspectives*, 103 Suppl. 6 (1995): 33–35; Philip J. Landrigan et al, “Pollution and Children’s Health,” *Science of the Total Environment* 650, pt. 2 (2019): 2389–2394.

45. Children’s Health Protection Advisory Committee (CHPAC), “Consideration of Legally Working Children in Pesticide Exposure Assessment,” CHPAC letter to EPA Administrator Michael Regan, December 21, 2021.

46. Gregory D Kearney et al., “Work Safety Climate, Safety Behaviors, and Occupational Injuries of Youth Farmworkers in North Carolina,” *American Journal of Public Health* 105, no.7 (2015): 1336–1343.

47. Taylor J. Arnold et al., “Heat-Related Illness Among Latinx Child Farmworkers in North Carolina: A Mixed-Methods Study,” *New Solutions*, 30, no. 2 (2020):111–126.

48. Ibid.

important social and political issues that must be considered in any sincere effort to assess the risks that pesticides pose to the health of farmworkers and children. We will focus our response on these other social and political issues, given their importance and their alignment with our areas of expertise.

1. Throughout its pesticide programming, EPA needs to account for the fact that children regularly work in agriculture.

Children working in agriculture do the same tasks as adults and are exposed to the same chemicals and other dangers. Moreover, children are under more stress than adults and thus are more vulnerable to harm from chemical exposure because they are often expected to work faster than adults and are expected to carry heavy loads disproportionate to their body weight and strength. Some children working in agriculture are authorized to do so, as U.S. labor law allows children to work in agriculture at a younger age than in other occupational sectors. Some children working in agriculture do so without authorization, as they are younger than the lawful age, work longer hours than is allowed, or are assigned tasks that should be restricted to adults. EPA risk assessments, compliance assistance, and other programming must account for these facts in all of its pesticide work.

2. Throughout its pesticide programming, EPA needs to account for the fact that children of immigrant farmworkers are more likely than other children to work in agriculture.

Children of immigrant farmworkers often must accompany their parents to the fields, sometimes to work, and sometimes just to play or study where their parents can supervise them while working. Immigrant farmworkers often take their children to the fields with them because they need their children to work in order to make ends meet, regardless of whether the children meet the age and other requirements to lawfully do so. Immigrant farmworkers do not make enough money to afford childcare; there are not adequate afterschool programs (especially for parents without Social Security cards); they do not have the time or other resources needed to drive their children to afterschool programs; or they would be fired if they were to leave work in order to pick their children up from school or drive their children to extracurricular activities. Additionally, many immigrant farmworkers find that food assistance and afterschool programs are difficult to apply for because of language barriers, the lack of language translation services, insufficient transportation, and scheduling conflicts with parents' work schedules (appointments for such programs are often in the middle of the day; attending appointments means losing income and possibly losing one's job).

Additionally, immigrant farmworkers' children often experience racist and anti-immigrant bullying at school, have a hard time making friends due to migrating frequently, and cannot afford to go to college. Such factors make school undesirable, compel many to drop out of school and instead work, and make the children of immigrant farmworkers more likely than other children to work in agriculture.

3. Throughout its pesticide programming, EPA must account for the fact that children of immigrant farmworkers are disproportionately exposed to pesticides.

Children of immigrant farmworkers are disproportionately exposed to pesticides at home through residues on the clothing of household members who worked in the fields and on surfaces, such as counters, carpets, and furniture. Farmworkers' low wages mean that they have less access to washing machines, and that there is less time for family members to wash all of their clothing. Moreover, household washing machines may not adequately remove pesticide residues from clothing. Children who work in agriculture and apply pesticides often don't use adequate clothing or PPE because it is not given to them, it does not fit properly, employers do not adequately impress upon them the importance of wearing it, or pesticide safety training is not tailored to children.

EPA should ensure that all workers are provided properly sized PPE, instructed on how to use it properly, and educated about the importance of doing so. More importantly, Agencies must ensure that children under age 18 are not allowed to apply pesticides or reenter treated fields early.

EPA should require employers to provide facilities for farmworkers to shower and change clothes at the workplace so workers do not carry pesticide residues into their vehicles and homes.

EPA should investigate whether standard household and laundromat washing machines adequately remove pesticide residues from worker clothing without cross-contaminating subsequent washing cycles. If the washing machines are found to be inadequate in this regard, EPA should require all farm owners to provide adequate washing machines for workers to use.

EPA should also investigate whether work clothes washed in home washing machines can then be dried safely in a clothes dryer, or if they need to be air-dried outside. If the latter, EPA should work with other agencies to address the facts that municipal codes or informal norms often prohibit the drying of clothes outdoors and that people of color are disproportionately criticized for using their outdoor spaces for such purposes. Additionally, guidance on this issue must acknowledge and take into account the fact that, if pesticide applications are taking place in the surrounding area, pesticide drift can contaminate the clothing while it is drying.

EPA should provide guidance to farmworkers about the best types of clothing and footwear for reducing pesticide exposure and transport, how best to transport and store their chemical-contaminated clothing and shoes, how best to wash their clothing, and how best to dry it.

4. EPA must account for the fact that pesticide exposures among farmworkers and their children are under-reported relative to those of other people working in agriculture.

Immigrant children's pesticide exposures and other workplace injuries are often not reported because parents fear retaliation, losing their employment, or interacting with law enforcement. They may think their employer is doing them a favor by allowing their children to work.

The EPA should provide or fund training for healthcare providers on children's pesticide exposure. This should encompass outreach efforts, including the deployment of community health workers to educate and train communities, provide PPE, and more.

EPA should also conduct pesticide exposure monitoring studies with children.

5. EPA must account for the fact that children of immigrant farmworkers are more vulnerable than other children to the effects of exposure to pesticides due to the many intersecting forms of stress they experience.

Children of immigrant farmworkers experience higher rates of food insecurity, polluted drinking water, stress about the potential deportation of themselves or their parents, racist treatment by police and other people, wage theft, stress associated with living in poverty, being bullied at school, living in unsafe housing (in which they are exposed and vulnerable to heat, smoke, pests, cold temperatures, rain, snow, and other elements), and other social and structural determinants of health that make them more vulnerable to harm from exposure to pesticides. Without work or residency authorization, driver licenses, or public transportation (which is especially lacking in rural areas), immigrant children are unable to meet people or make relationships in their community, which leads to isolation and loneliness. Climate change will surely exacerbate these vulnerabilities, as increased flooding, extreme heat, severe storms, and other aspects of climate change increase physiological and psychosocial stress in people living in precarity.

Climate change will exacerbate immigrant children’s vulnerabilities, as increased flooding, extreme heat, severe storms, and other aspects of climate change increase physiological and psychosocial stress in people living in precarity.

6. In accordance with the principle of cumulative impact assessment, EPA needs to account for these factors when assessing the risks of pesticides.

All of this information indicates that children of immigrant farmworkers are exposed to pesticides more than the quantitative research would indicate, and they are more vulnerable than the average population to the effects of exposure. However, these social and structural determinants of health and immigrant farmworking children’s disproportionate vulnerabilities are not factored into EPA’s risk assessments. Instead, EPA over-relies on toxicological studies—controlled experiments on non-human animals in a laboratory setting—which underrepresent the impacts of pesticides for many reasons, including that they do not capture the full range of pesticide impacts on the health of humans (who live longer lives than laboratory animals) and do not evaluate the impacts of chemical mixtures to which people are exposed in real life. In all of its work pertaining to pesticides, children, and farmworkers, EPA must use greater uncertainty factors or other ways to integrate into the risk assessment process qualitative data on pesticide harms/costs, small-n quantitative study findings, epidemiological study findings, community-generated data, survey data, and other data relevant to the questions being asked in this charge. There is a lot of relevant information that should inform risk

assessments for which we simply do not have large-n quantitative studies. Among other things, taking such information seriously would mean utilizing more stringent uncertainty factors within risk assessments, as some state agencies do and as EPA has not adequately done.⁴⁹

7. EPA should create pesticide education programming that would be implemented in middle schools, high schools, and other spaces frequented by children to educate children about the harms of pesticides.

Given that children often work in agriculture, they should receive education about the harms of pesticides before they take up employment on farms. This could help them make more informed decisions about taking agricultural jobs and the implications of doing so for themselves and their bodies.

8. EPA should create a special WPS training geared toward children.

The current videos could be made much more interesting and relevant to children.

9. EPA's Office of Research and Development should prioritize researching children's exposures and vulnerabilities to pesticides.

Research should not result in a delay in improving protections for farmworker children for all the reasons described above.

10. EPA should work with other agencies to expand afterschool programming for farmworkers' children.

EPA has a key role to play in expanding afterschool programming, given that the lack of affordable childcare is a major reason that farmworkers' children must accompany their parents to work, and hence is a major contributing factor to children's exposures to pesticides. Expanding such opportunities would entail more locations and longer operating hours, as many farmworkers have to start work very early in the morning or work into the evening—or both. This could entail working with the U.S. Department of Health and Human Services with regard to its Migrant and Seasonal Head Start Program.

11. EPA should work with other agencies to expand health care in rural communities.

Expanding rural health care would include more facilities; longer operating hours; Spanish-speaking staff; and improved capacities to diagnose, treat, and report pesticide exposures. (See additional details about this under the Overarching Recommendation #7 above, and under Charge Question 4 recommendation 6 below.)

49. Olga V. Naidenko, "Application of the Food Quality Protection Act Children's Health Safety Factor in the U.S. EPA Pesticide Risk Assessments," *Environmental Health* 19, no.1 (2020).

Our laws allow the exploitation of children in agricultural work, which is not tolerated in other sectors.

12. EPA needs to work with other agencies, perhaps through an interagency task force, to help shield farmworker families—and especially children—from pesticide exposures and other workplace issues that affect them throughout their lives.

EPA and partner agencies should levy the highest penalty possible against those who violate pesticide regulations. Among other things, employers should receive severe penalties for instructing or allowing children under age 18 to apply pesticides or reenter treated fields early.

EPA's efforts should not only address scientific questions but also attend to the personal well-being of farmworker families. As part of this, EPA should work with the Department of Health and Human Services and other agencies to press Congress to end the child labor exemptions in U.S. labor law.

Our laws allow farmworkers' children to be treated differently than other children; we allow the exploitation of children in agricultural work, which is not tolerated in other sectors. We should not continue to accept these exclusions that deny basic protections to children in the agricultural sector, protections they should have in general. Children should not be allowed to work in agriculture until they are old enough to reason. At the same time, because families often need children to work, we need to ensure that the community has resources to support them if they are not allowed to work in agriculture.

This information highlights the need for coordinated action across federal agencies to level the playing field for children of immigrant farmworkers so that they do not need to work or play in the fields. This entails improving farmworker wages and other compensation, including overtime pay and health insurance; improving access to Head Start and afterschool programs; and reforming the Fair Labor Standards and the National Labor Relations Act to end the exemption of farmworkers from those laws—including bringing age and work hour standards for adults and children in agriculture up to the standards for other sectors.

Charge Question 4. Expand or Enhance Training for Inspectors Who Conduct Worker Protection Standard Inspections

EPA requests the NEJAC suggest how EPA can incorporate a deeper understanding of farmworker concerns about WPS inspections into training materials.

Charge Questions:

A. What feedback, observations, or experiences can NEJAC share about inspections to help EPA enhance training and thereby improve inspections and enforcement?

B. What communication approaches, processes, or strategies does the NEJAC recommend to increase information sharing and build trust between WPS inspectors and farmworkers?"

We commend EPA for asking for the NEJAC’s feedback on this topic. More effective inspections are sorely needed because *violations are both common and invisible to regulatory agencies*.

Farmworkers, farmworker advocates, investigative journalists, and academic researchers have argued and demonstrated that employers often do not comply with labor and pesticide regulations.⁵⁰ Notably, one of the most common WPS violations is not properly posting re-entry interval restrictions. For example, in many places, “Do not enter” signs always remain posted, which makes them meaningless to workers.

Additionally, employers often do not provide PPE to workers, do not provide PPE that fits properly, expect workers to use a set of PPE longer than it will reasonably last, or do not provide training about how to use PPE effectively. Employers often shame workers who ask for PPE, belittling and mocking farmworker men who request PPE with sexist comments like, “Little delicate you; you look like a woman” or by saying, “You can bring your own [PPE].” Some workers have health conditions that make the use of certain PPE (like respirators) dangerous but aren’t warned about those dangers. Employers often do not inform workers about nearby pesticide applications. Employers often do not inform workers that pesticides are hazardous, or they outright lie about their dangers by telling workers that the pesticides are safe or that they are actually just fertilizers. Indeed, crew leaders often refer to pesticides, including highly hazardous pesticides, as *medicinas* (medicines), which frames them as healthy and beneficial. Employers do not post information about which pesticides they are using. Some employers use unauthorized pesticides and then burn the containers. Employers often apply pesticides in unsafe conditions—such as on windy days—and fail to give notice of pesticide applications to neighbors even when required to do so. In many cases, pesticide container

50. For instance, see: Scott and Norton, *Precarious Protection*; also see: Olivia N. Guarna, *Exposed and At Risk: Opportunities to Strengthen Enforcement of Pesticide Regulations for Farmworker Safety*, (Vermont: Center for Agriculture and Food Systems, 2022); Sara Veniera, “Poisoned by Pesticides,” October 11, 2023.

labels are obscured or missing, so workers cannot determine what chemical is being used or how to apply it safely.

At the same time, many factors render these pesticide violations invisible to regulatory agencies. Farmworkers emphasize that employers will not comply with certain pesticide or labor laws *except* when WPS inspectors visit, so WPS inspectors get an inaccurate perspective on how well employers comply with pesticide and other labor laws. For instance, employers often do not provide soap at wash and decontamination stations except when WPS inspectors visit. Women are at additional risk of pesticide exposure because they often do not have access to restrooms and washing stations during their menstrual cycle.

Employers often do not inform workers that pesticides are hazardous, or they outright lie by telling workers that the pesticides are safe.

Additionally, fear of retaliation makes workers reluctant to report pesticide and labor violations. Workers are often retaliated against for complaining about workplace safety violations. Some employers threaten to call immigration authorities if workers complain. Employers will often wait months to retaliate against a worker to reduce the appearance of retaliation. Pregnant women especially avoid reporting violations because employers will often fire workers who are pregnant. Workers who lack authorization to live and work in the United States, or who live with others who do, are afraid to report workplace violations because doing so could lead to interactions with law enforcement and potential arrest and deportation. This fear has increased over time with an increasingly militarized U.S. border and immigration policies as well as the growing hostility directed at immigrants racially marked as “Hispanic.”⁵¹ H-2A workers are particularly hesitant to voice complaints because they fear being fired in retaliation. For H-2A workers, retaliation could mean being fired immediately, which would cause the worker to lose their visa and have to return home unless they could find a different job within just a few days, or retaliation could mean not being rehired in the next season. Coworkers may also retaliate because reporting pesticide exposures could put the whole worker cohort at risk of retaliation from the employer. Hence, workers go through a complicated decision-making process when deciding whether to report pesticide or labor violations.

There have been many instances where workers initially agreed to report a complaint but later backed out due to the apprehension of having to make an official statement. Immigrant advocates report that the number of workers who back out of filing a formal complaint greatly exceeds the number of workers who complete the complaint process. Moreover, when workers do report pesticide exposures, they are often dismissed by health clinic staff, regulatory officials, and

51. Jill Lindsey Harrison and Sarah E. Lloyd, “Illegality at Work: Deportability and the Productive New Era of Immigration Enforcement,” *Antipode* 44, no. 2 (2011): 365–385.

employers.⁵² For all of these reasons and others, pesticide and labor violations are both common but invisible to regulatory agencies.

1. Conduct unannounced spot inspections unless research indicates that announcing an inspection in advance does not affect the inspection findings.

Farmworker accounts and common sense indicate that when inspections are announced in advance, employers instruct their workers to put the worksite in order, which misrepresents the normal working conditions. Therefore, agencies should conduct unannounced inspections to more accurately assess employer compliance with pesticide and labor laws.

We recognize that conducting unannounced inspections is extremely difficult, given the limited resources devoted to enforcement, the considerable distances among farming operations and between them and Agency offices, the large size of farming operations, and the facts that enforcement staff do not know exactly when or where personnel will be on site or where records are kept. These factors constrain the effectiveness of announced inspections and the ability to conduct unannounced inspections to such a degree that enforcement staff can't actually ensure that pesticide regulations are being complied with. A compromise could be made by providing a potential time frame during which the inspection will take place while still preserving the element of surprise by not revealing the exact inspection date.

EPA should conduct or fund a study on whether announcing an inspection in advance affects the number and type of violations found. If the study indicates that announcing the inspection does not tend to affect the inspection findings, then EPA could justify the reliance on announced inspections. EPA regional office staff informed us that no one has evaluated whether there are more violations found with unannounced versus announced inspections. Without such empirical analysis, and given farmworkers' reports that employers increase compliance with pesticide laws when they know inspectors are coming, agencies' reliance on announced inspections does not yield reliable information.

2. Ensure that all farms are being inspected.

Inspection staff shared with us that they do not have a comprehensive list of farms to be inspected, so they visit farms they have previously visited. Agencies need to conduct unannounced inspections on farms that agencies have not previously visited. To do so, they could collaborate with USDA and land grant university extension services to create and regularly maintain a master registry of active farms along with the number of employees they hire and during which times of year.

3. Educate employers about their responsibilities.

Inspectors should educate employers about their responsibilities, workers' rights, and the standards employers need to meet.

52. Harrison, *Pesticide Drift*.

4. Create ways for workers to feel comfortable making complaints.

Inspectors should not rely only on input from employers and owners, given their conflicts of interest. It is imperative that inspectors develop ways to collect workers' input, and they must understand that workers often have concerns but are afraid to report them.

Train inspectors to understand the risks of retaliation against farmworkers who complain about pesticide exposures and that the official inspection process is intimidating for many workers, so inspectors should make efforts to make workers feel comfortable.

Inspectors should wear clothing that is not intimidating to workers who are wary of interacting with law enforcement. Many farmworkers are afraid of interacting with people in official-looking uniforms, as those could be immigration authorities.

In addition, inspectors should be neutral in their behavior and work alone, separate from employers or managers. During inspections, employers and inspectors often chat together in a chummy, friendly manner. That camaraderie signals to workers that inspectors are inclined to support employers and not workers.

Inspectors could also meet with workers away from the workplace so workers feel more comfortable sharing their experiences. Farmworkers tend to feel intimidated if they are interviewed in the presence of their manager, crew leader, or contractor.

Inspectors should leave business cards with their name and phone number for the workers. If workers feel uncomfortable talking with the inspectors during the visit for any reason, they can call after work.

Inspectors should take workers seriously. Sometimes when workers report pesticide exposures, the investigator or other responders dismiss their concerns and experiences and do not question the account of the employer or applicator about what chemicals were applied. This dissuades other workers from reporting pesticide or other labor violations.

Inspectors should inform workers about their rights.

Inspectors should provide updates about investigations to workers who made reports. Some workers make reports and then never hear back about the issue, which gives workers the impression nothing is being done.

Lastly, EPA should create a way for workers to submit a complaint anonymously via phone at any hour of day, operated by staff who are fluent in Spanish and English and can access interpreters for other languages that some workers speak most comfortably. It is important that workers be able to make such complaints anonymously. Currently, at least some state lead enforcement agencies have open public records that can only offer confidentiality and not anonymity. A lot of workers said they would make a complaint if they did not have to give out their name. EPA could advocate for a clause in the Health Insurance Portability and Accountability Act or the Freedom of Information Act to protect the identities of farmworkers making the complaint.

5. Ensure appropriate timing of inspections.

Inspections need to be conducted during times of high pesticide use in order for inspectors to be able to observe relevant conditions. Instead, they are often conducted during harvest periods, when pesticides are not being used. Additionally, inspectors should not try to consult with farmworkers during stressful settings; for example, while they are working.

6. Improve the processes for investigating reports of pesticide and labor law violations.

Inspector responses to pesticide and labor law violations need to be improved in many ways, as those responses often are conducted without sufficient sensitivity to the precarity workers experience, are conducted in a cursory fashion, fail to take seriously workers' narrative accounts, and are stymied by reliance on data that are often impossible to collect.

Investigators should receive training on how to be more sensitive to worker concerns, such as that workers may not have work or residency authorization documents. Inspectors need to be better trained so that they know not to ask for the person who filed a complaint because the person might get laid off if the employer found out.

To increase their accountability, inspectors should document their complaint response: where they visited, who they talked to, what samples they took, how long the inspection took, and other details.

In addition, investigations need to be conducted more expediently. They often take years.

Inspectors must treat those who report concerns respectfully and take their concerns seriously. In many cases, workers and others who submit complaints receive a dismissive response from the inspector or agency representative.

Provide updates to those who filed complaints. Workers who file complaints typically do not get any response, which makes them think nothing is happening and dissuades other people from reporting violations.

When workers have submitted complaints or where inspectors have been informed that workers were too afraid to follow through with a complaint, inspectors should observe where and how the employer conducts the WPS training for workers and watch workers being trained to see what kind of environment the workers experience when they are being trained and to offer suggestions for improving the trainings.

EPA needs to provide greater oversight in pesticide regulatory investigations. Even when workers' reports about pesticide exposures and other violations are substantiated with other evidence, investigations often result in no enforcement action or only a minimal fine. Levying only warning letters or small fines does not compel employers to comply with the law.

Agencies should investigate worker complaints and issue warnings or fines to the greatest extent possible, even if the worker does not want to participate in a formal interview with the investigating agency.

EPA legal counsel should explore the Agency’s authority to validate workers’ claims about pesticide exposures more expansively than is currently done. Currently, workers’ claims about their experiences are given little merit without an inspector observing the event or other incontrovertible substantiating evidence. Yet such evidence is virtually impossible, given the sheer number of pesticide applications and the small number of inspectors, the fact that other substantiating evidence is very difficult to collect and analyze in a timely fashion, and the fact that workers have many reasons to not make such reports (including retaliation from employers). EPA staff report that WPS violations are very difficult to prove. Justice requires that legal counsel find ways to rectify this, including mandating that companies keep much more careful and accurate records of pesticide applications, applicator names, and the work locations of other employees. Otherwise, pesticide investigations are more performative than effective.

EPA staff report that WPS violations are very difficult to prove. Justice requires that legal counsel find ways to rectify this.

EPA should advise public health agencies to investigate reports of pesticide exposure even in cases without medical records of pesticide exposure. Farmworkers often do not seek medical care when exposed to pesticides because they cannot afford the fees, cannot afford to take time off of work, think the symptoms will go away on their own, or are afraid that the doctor will inform the worker’s employer that the worker was concerned about pesticide exposure—which has happened and for which employers have retaliated against workers. Public health officials will not investigate unless the person went to a doctor, clinic, or hospital and has some kind of medical record. This policy renders many pesticide exposures invisible to regulatory agencies. EPA should advocate for changing this policy so that investigations can proceed with less evidence. Health care providers should also have the right and responsibility to ask agricultural employers for the name of each pesticide applied at the time that the patient was working and exposed.

Employers often use smart phone apps that track employee working hours, work locations, tasks, and other work details. EPA could potentially use this data—with workers’ permission and with protecting the identity of individual workers in order to reduce possibilities of retaliation—to substantiate workers’ reports of pesticide exposure.

7. Collect better data on compliance with the WPS.

Existing data on compliance is limited and unreliable.⁵³ EPA should work with researchers and farmworker advocates to identify pesticide-related gaps in EPA’s Enforcement and Compliance

53. Scott and Norton, *Precarious Protection*.

History Online (ECHO) database and then develop and implement a plan for rectifying those shortcomings.

Relatedly, the ECHO database should be more transparent for those who are researching it. From what we understand, the ECHO database reflects only federally funded enforcement and does not reflect state-funded enforcement, which could vary dramatically from state to state.

8. Increase fines for violations, increase consequences for repeat offenders, and track repeat violators.

Violations often result only in a warning letter or in a fine so small that it is cheaper to pay the fine than to comply with the law.⁵⁴

Fines for pesticide violations (limits to which are set by states) need to be increased to more effectively compel pesticide users to comply with existing laws and regulations. This includes establishing a minimum penalty for pesticide and farm labor violations and increasing the maximum civil monetary penalties and maximum criminal penalties for pesticide and farm labor violations.

EPA and its partner agencies should collect, track, and share data on the percentage of non-first-time violations that result in warning letters versus fines, the size of the fines, how those fines compare with EPA's minimum and maximum penalty amounts, the percent of repeat violators receiving warning letters, and which actors are repeat violators. Such data are important for providing oversight and to identify areas needing improvement. These data need to be submitted to EPA, and EPA needs to provide greater oversight over these patterns. There needs to be consistency across states in collecting and analyzing this data. EPA should track enforcement data to identify where stronger regulations are needed; that is, for patterns of illnesses without clear violations.

EPA should use data on repeat violators to inform the Department of Labor (or other agencies) of which employers' H-2A worker requests should not be approved and otherwise should receive more oversight in terms of labor relations. The lack of communication among agencies about repeat pesticide violations sends a message to employers that their violations are not serious because they can be in a state of noncompliance with EPA while at the same time, other agencies are approving them to hire H-2A and other temporary visa workers.

The lack of communication among agencies about repeat pesticide violations sends a message to employers that their violations are not serious.

54. Guarna, "Exposed and At Risk."

EPA should use data on repeat violators to decline those actors' requests for permission to use restricted use pesticides.

Repeat violators could also be required to have their pesticide applications monitored by a third-party auditor for a certain time period (for example, one year) at the pesticide user's expense.

9. Hire more inspectors who are fluent in Spanish and, where appropriate, other languages commonly spoken among farmworkers.

Currently, states tend to have only a few enforcement staff who speak Spanish and none who speak other languages spoken by farmworkers in their region. This is a huge barrier to inspections, given that the overwhelming majority of farmworkers are Spanish speaking and that some other groups of farmworkers do not speak either English or Spanish.

Inspectors often rely on crew leaders for translation. However, doing so is a conflict of interest, as crew leaders want to maintain strong relationships with employers and owners will often select crew leaders who will not speak candidly with inspectors. EPA's "Breaking Barriers" training program,⁵⁵ and enforcement staff members' use of apps like Google Translate, help to bridge this language barrier, but these tools are insufficient and do not solve the problem.

10. Ensure that inspectors are well trained and motivated to continually improve.

Require cultural awareness and sensitivity training for WPS inspectors. Such trainings could perhaps be run by the Pesticide Educational Resources Collaborative. The development of those trainings should have input from farmworker organizations to ensure that the trainings are appropriate, relevant, and effective. Among other things, inspectors should be trained to understand workers' legitimate fear of retaliation. They should also be trained to understand that many Latinx immigrant communities have a cultural norm to persevere and not complain, and that this norm dissuades people from reporting workplace violations to authorities or even to each other.

WPS inspectors should observe several WPS trainings with actual farmworkers to better understand farmworkers' questions. Inspectors could be asked to observe and discuss the workers' attention to and perceptions of the materials. It would be most beneficial for inspectors to observe and compare styles of WPS training, such as the WPS video as compared to a popular education method of training, such as those used by some farmworker organizations, to better understand how farmworkers are being trained.

Comprehensively train inspectors to ensure they can accurately identify pesticide products, understand the symptoms they may cause, and establish more robust claims in cases of exposure.

Inspectors should be trained to effectively convey to farmworkers the real implications and risks associated with working around pesticides to ensure that individuals truly understand the importance of safety training.

55. U.S. EPA, *Breaking Barriers: A Pesticide Inspectors' Manual for Interviewing Spanish Speaking Agricultural Workers on the Worker Protection Standard* (Washington, DC: US EPA Office of Enforcement and Compliance Assistance, 2007).

Explore the possibility of establishing a system where inspectors doing exemplary work could accumulate points based on their performance. This would determine the frequency of renewing their licenses and updating their credentials.

Inspectors could be required to be re-trained regularly (such as annually) or to get a certain number of continuing education credits each year (such as in cultural awareness and sensitivity).

Inspectors could be required to be evaluated annually to identify inspectors who do not treat farmworkers and others with due respect or do not conduct culturally appropriate inspections.

11. Provide more resources for inspectors, inspections, and investigations.

All Agency staff and other inspectors we have spoken with tell us that their resources for inspections are woefully insufficient. Agencies need more resources for conducting inspections and investigations. As part of this, all states and regions need more enforcement staff who speak Spanish, as described above. In addition, EPA should conduct a gap analysis considering staffing shortages. Finally, inspector training programs should receive more funding to build a strong skill set among inspectors, as described above.

12. Provide stronger oversight over states' compliance with WPS.

As part of this oversight, EPA should track the geographic distribution of inspection resources to ensure that such resources are being allocated to the communities that most need them.

Agencies with conflicts of interest should not be authorized to implement the WPS program. Many agencies that enforce the WPS are in Departments of Agriculture or County Agriculture Commissioner offices, whose mission includes promoting agricultural production, which constitutes a conflict of interest.

In addition, there needs to be a greater effort to make small growers comply with the regulations. There is often more attention from state lead enforcement agencies on larger growers while small growers are left out.

To further improve oversight, EPA should identify the best compliance and enforcement practices being implemented by the states and EPA regions and compile them for possible replication or adaptation by the other states and regions. A state program might be identified as a “gold standard” with respect to protection for farmworkers and could serve as a model for other states.

13. Implement stronger restrictions on the use of the most toxic pesticides.

Justice requires that EPA implement stronger restrictions on the use of the most toxic pesticides. The current pesticide regulatory system effectively relies on industry actors to comply with existing laws and regulations. Yet there are millions of farmers, which makes surveillance of all pesticide applicators an impossible goal. Moreover, most farmers tend to work under very tight profit margins, so they are under substantial economic pressure to violate pesticide and labor laws where needed to maintain profits. Additionally, as evidenced by the flourishing organic agriculture industry, less-toxic alternatives exist for many pest problems, including lower-toxicity chemical pesticides, biological controls, cultural controls, mechanical controls like flame weeding and [autonomous weeding robots, and other techniques of integrated pest management](#).

The NEJAC looks forward to collaborating with the Agency moving forward, such as through the creation of a new NEJAC workgroup focused on this topic. To facilitate that collaboration, we would like the Agency to respond to some of these recommendations at the NEJAC's fall 2024 meeting, and to respond to the full set of recommendations at the NEJAC's spring 2025 meeting.

Justice requires that EPA implement stronger restrictions on the use of the most toxic pesticides; less-toxic alternatives exist for many pest problems.

Appendix 1. Charges to the NEJAC Taken Up by the Farmworkers and Pesticides Workgroup

Farmworker and Pesticides Charge to the National Environmental Justice Advisory Council March 30, 2023

After extensive discussions with the National Environmental Justice Advisory Council's (NEJAC) Farmworker and Pesticide Workgroup, EPA's Office of Chemical Safety and Pollution Prevention (OCSPP) and EPA's Office of Enforcement and Compliance Assurance (OECA) seeks the advice and expertise of the Council to provide technical information and recommendations to advance how the Agency:

- I. Develops new methods to provide access to information on bilingual (Spanish) pesticide labels for farmworkers;
- II. Strategizes to create a new farmworker indicator to measure progress in reducing disparities;
- III. Enhances its understanding and knowledge of exposure related to legally working children in agriculture, and
- IV. Trains inspectors who conduct Worker Protection Standard inspections.

The health and safety of America's farmworker communities is a priority for EPA. The Biden-Harris Administration is committed to ensuring agricultural workers and pesticide handlers are provided with access to information and health protections. EPA provides resources and conducts initiatives to protect the well-being of farmworkers and their communities. However, despite our hard work and successes, we know that there are still real-life issues that farmworkers are facing in the fields.

EPA is committed to continued engagement with the NEJAC's workgroup to discuss areas of concern and identify EPA activities that may take us further to address these concerns, where ultimately input can share new awareness for EPA to make meaningful changes. As a first step, the Agency presents this charge with several subjects outlined below:

I. OCSPP: Establishing Farmworkers' Access to Bilingual (Spanish) Labels

The Pesticide Registration Improvement Act of 2022 (PRIA 5) includes a new directive for EPA to generally require that sections of the labeling contained in the Spanish Translation Guide for Pesticide Labeling (Spanish Translation Guide) be translated into Spanish on containers with an option for a link to these translations via a scannable technology or other electronic methods readily accessible on the product label. The Agency is to implement these label requirements under a schedule spanning three to eight years, based on the use and relative toxicity of the pesticide product.

To get started, EPA wants to obtain early input from the NEJAC to understand how the program can build effective communication processes and mechanisms to successfully increase access and use of Spanish labels for farmworkers. EPA acknowledges concerns voiced by farmworker advocates, who believe that having bilingual pesticide labeling is critical to the well-being of farmworkers, as well as recognizing that Spanish is the first language for a significant portion of farmworker populations. The Agency understands that Spanish labels will not eliminate the entirety of pesticide exposure among farmworkers, but this effort may improve the understanding of and access to health and safety information.

Pesticide labels are designed to provide critical information about how to handle and safely use the pesticide product and avoid harm to human health and the environment. Labels also contain

information on potential hazards associated with the product and instructions in the event of a poisoning or spill.

In 2019, EPA created the Spanish Translation Guide to provide standardized language for pesticide registrants that choose to voluntarily translate parts of their labels into Spanish. When used, the guide will ensure accuracy in the translations and promote consistency in Spanish labeling. The Agency plans to use this guide as a resource for pesticide registrants as they translate sections of the label, as directed by PRIA 5. Sections of a label within the Spanish Translation Guide include: (1) Signal Word, (2) First Aid, (3) Hazards to Human and Domestic Animals (Precautionary Statements), (4) Personal Protective Equipment, (5) Storage and Disposal Instructions, (6) Keep Out of Reach of Children Statement, (7) Key Statements for Restricted Use Pesticides, and (8) the universal translation of the misuse statement - "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."

By 2025, the Agency must develop an implementation plan with effective approaches for increasing farmworkers' access and use of labels with Spanish translations. EPA requests the NEJAC help the Agency focus on how to establish access of bilingual Spanish labels (e.g., paper labels or electronic method) for farmworkers in a meaningful manner. EPA is open to learning about on-the-ground communications techniques and practices to make a meaningful impact in farmworker communities.

Charge Questions

- A. What communications approaches, processes or strategies would the NEJAC recommend for ensuring Spanish labels are accessible to farmworkers? What specific approaches should the Agency avoid when implementing efforts to ensure farmworkers' access to Spanish labels?
- B. What technologies, mobile applications and internet access should the Agency consider? Would web-based labels be accessible to farmworkers? Does limited internet access provide a significant barrier?
- C. How can the Agency effectively share information with farmworkers? What should on-the-ground logistics look like? What partners should the Agency work with?
- D. What components should the Agency have within the implementation plan to increase farmworkers' access to bilingual (Spanish) labels?
- E. Beyond the Spanish language requirements in PRIA 5, the Agency is interested in learning how to improve fundamental access of labeling to farmworkers speaking non-English languages other than Spanish. What additional recommendations does the NEJAC have to improve access to these workers?

Materials listed below are provided as background information to support the NEJAC's consideration of the charge questions.

- Spanish Translation Guide for Pesticide Labeling webpage provides a guide for pesticide registrants that choose to translate parts of their pesticide product labels into Spanish.

- <https://www.epa.gov/pesticide-labels/spanish-translation-guide-pesticide-labeling>
- PRIA 5 Bilingual Labeling Requirements (attachment)

Other Related Resources

- The Occupational Pesticide Safety and Health webpage provides an overview of information to agricultural workers.
 - (English) <https://www.epa.gov/pesticide-worker-safety>
 - (Spanish) <https://espanol.epa.gov/seguridad-laboral-al-usar-pesticidas>
- The Agricultural Worker Protection Standard (WPS) webpage provides an overview of who is required to comply with WPS and a list of compliance requirements, including labeling.
 - <https://www.epa.gov/pesticide-worker-safety/agricultural-worker-protection-standard-wps>

II. OCSPP: Input on Building a New Environmental Justice Indicator

To achieve environmental justice goals and reduce disparities in environmental and health outcomes, the Agency is working to address deeper social causes. [Healthy People 2030](#) defines health disparities as:

A particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion.

EPA can play a key role through our programs and as a catalyst for change. Through [EPA's FY2022-2026 Strategic Plan](#) (Strategic Plan), the Agency identified the following Agency Priority Goal: By September 30, 2023, EPA will establish at least 10 indicators to assess EPA's performance in reducing disparities in environmental and public health conditions. The Strategic Plan also identified a long-term performance goal of reducing disparities in environmental and public health conditions as measured by these new indicators by 2026.

Through clear and meaningful metrics, the Agency will be able to evaluate its success in reducing public health and environmental disparities. This effort aims to think holistically across EPA programs and with external partners, use our resources to do things differently, and demonstrate progress in reducing disparities.

Examples of potential indicators from the Strategic Plan include minimizing public health disparities such as the difference in childhood blood lead levels and the prevalence of asthma for children living in families below the federal poverty level and children living in older housing, who are often children of color. Some indicators will be centrally linked to EPA authorities while other will be more linked to EPA abilities to convene and collaborate with partners. Indicators will also represent different scales (national, regional, state, local). Please see the Agency Disparity Indicator Resources below for additional examples of proposed disparity indicators.

To support the new Agency effort outlined above, EPA is exploring development of a farmworker indicator that the Agency could address through its programs. EPA requests the NEJAC's input to help refine the focus of a potential indicator. This indicator should meet the following criteria:

- Meaningful to the public, clearly stated, and easy to understand,
- Can be affected through EPA actions or the work of our partners (with a logic model to be developed),
- Data are publicly available, reliable, and updated at least annually (Note: At this time, the Agency is open to relevant datasets beyond annual updates to learn what may be available), and
- Ability to demonstrate progress in addressing farmworker issues.

Thus far, EPA has worked to identify existing datasets that could be leveraged to develop an indicator related to farmworkers. While many datasets were identified, all have significant limitations. EPA requests that the NEJAC share ideas on significant issues that the Agency should consider for the indicator as well as input on available data and recommendations for data analysis.

Charge Questions

- A. Which types of indicators would be most meaningful to farmworker communities? Please see the Farmworker Disparity Indicator Examples below for different types of indicators.
- B. Which types of environmental/health issues are most urgent to farmworker communities and could be tracked through this effort? How can the Agency analyze certain disparities related to these environmental/health issues?
- C. What datasets are missing from the list below that would be helpful to consider (even if not available nationwide)? What are your recommendations on how to best leverage/combine existing datasets?
- D. Given the limitations of existing datasets, what are the most pressing data gaps that could be addressed for development of a future indicator? How does the NEJAC recommend that these data gaps be filled?
- E. Disparities are frequently measured between groups; however, disparities can also be measured from other reference points such as the total population. The choice of a reference point from which to measure disparity is a critical issue, especially considering the demographics of farmworkers. Which approaches do you recommend in identifying an appropriate comparison group that captures farmworker disparities? For more context, reference: [Methodological Issues in Measuring Health Disparities](#).

Materials listed below are provided as background to support the NEJAC's consideration of the charge questions.

Farmworker Disparity Indicator Examples

- Worker Protection Standard (WPS) Implementation Data (Pre- and post- testing from [WPS trainings](#), numbers of certified applicators trained)
- Enforcement Data ([EPA Enforcement and Compliance History Online WPS Dashboard](#))
- Environmental Concentration Data ([USGS National Water-Quality Assessment Project](#))
- Exposure/Biomarker Data ([CDC NHANES for pesticides and metabolites](#))
- Incident Data ([CDC SENSOR-Pesticides](#), [AAPCC – see indicator #11](#))
- Pesticide Use Data ([USDA Ag Chemical Use Program](#), [California Pesticide Use Reporting](#))
- Demographic Data ([DOL National Ag Workers Survey](#), [USDA Census of Ag/NCFH Migratory and Seasonal Farmworker Estimates](#))

Agency Disparity Indicator Resources

- [FY2022-2026 EPA Strategic Plan](#) (Review page 33, the Agency Priority Goal and Long-Term Performance Goal)
- [NEJAC Disparity Indicators Presentation](#) (Review slides 70-94, Presented to the NEJAC on November 30, 2022)

Other Related Indicator Resources

- [US Department of Health and Human Services Healthy People 2030](#)
- [CDC Environmental Justice Index](#)
- [Interdepartmental Health Equity Collaborative Compendium of Federal Datasets Addressing Health Disparities](#)

III. OCSPP: Strengthening EPA's Pesticide Exposure Assessment of Legally Working Children in Agriculture

EPA developed the Consideration of Legally Working Children in Pesticide Assessment (Analysis), in December 2016, to evaluate how EPA considers children performing post-application hand labor tasks in the risk assessment process to ensure that EPA's regulatory decisions are health protective. The Analysis focuses on post-application dermal exposures to adults and children working in fields previously treated with pesticides, which is known to be the predominant source of exposure for these types of working conditions.

This Analysis describes the data that EPA is aware of regarding the number of children currently actively engaged in farm labor activities, how such activities are considered in risk assessment, legal and other regulatory requirements associated with children working in agriculture, the methods used to assess the validity of current risk assessment methodologies, the data used to complete this analysis, and overall findings. EPA relies on several sources of information to understand the composition of the farm labor community. For example, the Agency uses the National Agricultural Workers Survey which conducts an employment-based, random-sample national survey of agricultural workers. EPA has used these data as part of the analysis for considering demographics and employment, including information about the number of children working in agriculture.

In May 2021, EPA consulted with the Children’s Health Protection Advisory Committee (CHPAC) through a formal charge to evaluate the exposure assessment methods to ensure they appropriately account for legally working youth. In December 2022, EPA established a short-term and long-term workplan to identify actions to address CHPAC concerns and recommendations.

As a short-term objective in EPA’s workplan to respond to CHPAC recommendations, the Agency is engaging with the NEJAC to further inform the scope of the exposure analysis. Sociodemographic data such as the types of activities that are expected for children legally working in agriculture and other factors that influence pesticide exposure from these activities, may inform uncertainties that have been identified by the CHPAC recommendations.

The Agency request that the NEJAC share quantitative information, research, and monitoring data; as well as factors to be considered for informing the analysis with additional or current information, related to legally working children in agriculture.

Charge Questions

- A. Is the NEJAC aware of additional exposure data to augment our analysis of comparative exposures between adult and children in agricultural settings?
- B. Can the NEJAC provide quantitative data and sources of information, in addition to the Department of Labor data used in the analysis, to inform these types of exposures and activities that are expected for children legally working in agriculture?
- C. The Agency currently relies upon the Exposure Factors Handbook for biometric data (i.e., body weights, surface area) for the general U.S. populations. Can the NEJAC provide additional data to reflect biometric differences amongst farmworker children populations in comparison to the general population?

Materials listed below are provided as background to support the NEJAC’s consideration of the charge questions.

- Appendix A. Consideration of Legally Working Children in Pesticide Exposure
 - EPA-HQ-OPP-2010-0119-0052. 12/22/16: <https://www.regulations.gov/document/EPA-HQ-OPP-2010-0119-0052>
- EPA Response to Letter on Youth In Ag November 2022
 - <https://www.regulations.gov/document/EPA-HQ-OA-2022-0054-0034>
- Interactions between EPA and CHPAC on the topic of Consideration of Legally Working Children in Pesticide Assessment
 - <https://www.epa.gov/children/childrens-health-protection-advisory-committee-chpac-comment-letters-and-meeting-materials>
 - May 10, 2021: <https://www.regulations.gov/document/EPA-HQ-OA-2022-0574-0008>
 - November 2, 2021: <https://www.regulations.gov/document/EPA-HQ-OA-2022-0574-0009>
 - May 18, 2022: <https://www.regulations.gov/document/EPA-HQ-OA-2022-0054-0019>

- o December 1, 2022: <https://www.regulations.gov/document/EPA-HQ-OA-2022-0054-0035>

IV. OECA: Expand or Enhance Training for Inspectors Who Conduct Worker Protection Standard Inspections

EPA's Agricultural Worker Protection Standard (WPS) aims to reduce pesticide poisonings and injuries among agricultural workers and pesticide handlers. WPS inspections take place where pesticides are used or handled, which usually occurs at agricultural establishments. Pursuant to FIFRA § 26(a), states have primary enforcement responsibility for pesticide use violations and, therefore, states conduct the majority of WPS inspections. During a WPS inspection, an inspector needs to have the skills to monitor compliance with the WPS rule and to collect evidence of potential noncompliance. Inspectors may collect records, conduct witness interviews, and take statements from farmworkers and pesticide handlers. Given the importance of inspections to determining compliance with the WPS rule, the Agency wishes to enhance existing training and/or develop additional training for inspectors who conduct compliance monitoring inspections at agricultural establishments which include farms, forests, nurseries, and greenhouses.

The objective of this Agency charge is to improve WPS inspections by enhancing the skills WPS Inspectors possess to identify and document potential violations and facilitate appropriate responses. Credentialed inspectors already receive training, but that training can be enhanced to achieve a greater understanding of the unique circumstances that may be present during a WPS inspection and provide inspectors with tools to recognize and overcome barriers to effective communication with workers and handlers. The Agency would like to specifically focus training on those areas of concern raised by National Environmental Justice Advisory Council (NEJAC) representatives. Namely, NEJAC has shared that language barriers, fear of retaliation, cultural barriers, and general reticence to speak with a government representative may pose impediments when conducting WPS inspections. Examples put forward by farmworkers during the NEJAC meetings included inspectors not being able to communicate effectively with workers having first-hand knowledge of potential violations; the adequacy of records inspections; ensuring compliance with personal protective equipment requirements of the regulations, and ineffective processes for reporting violations. The Agency would like to hear more about these farmworker concerns, and any other concerns NEJAC wishes to share, so that EPA can expand or enhance inspector training. The Agency recognizes that these improvements may not address the full breadth of farmworkers' concerns. Yet, NEJAC's perspectives can greatly enrich inspector skills to potentially improve employer's compliance with WPS and enforcement outcomes. Therefore, EPA requests the NEJAC suggest how EPA can incorporate a deeper understanding of farmworker concerns about WPS inspections into training materials. Under this charge, EPA requests NEJAC's feedback on the following questions:

Charge Questions

- A. What feedback, observations, or experiences can NEJAC share about inspections to help EPA enhance training and thereby improve inspections and enforcement?
- B. What communication approaches, processes, or strategies does the NEJAC recommend to increase information sharing and build trust between WPS inspectors and farmworkers?

Material listed below is provided as background information to support NEJAC's consideration of the charge questions.

- [EPA WPS How To Comply Manual](#)
- [Worker Protection Standard Inspection Manual](#)

Appendix 2. List of Recommendations

Overarching

1. Every aspect of EPA's pesticide program must take into account the social conditions in which pesticides are used in agricultural workplaces.
2. EPA should implement tighter restrictions on the use of toxic pesticides.
3. Agencies must conduct much more pesticide monitoring within and beyond agricultural fields.
4. Agencies must hold employers and other pesticide applicators more accountable for complying with existing laws and regulations.
5. Congress should authorize changes in labor regulations and pass legislation to create new protections for farmworkers and expand farmworkers' rights.
6. EPA leadership and staff need to acknowledge the shortcomings of pesticide laws, regulations, enforcement, and programs.
7. EPA should work with partner agencies to improve health care in rural communities so that farmworkers have access to quality health care by staff who understand how to monitor for and respond to cases of pesticide exposure.
8. EPA should ensure greater accountability for implementation of WPS.

Charge Question 1. Establishing Farmworkers' Access to Bilingual (Spanish) Labels

1. Conduct additional outreach to determine how best to implement these regulations.
2. Make the language of pesticide informational materials as accessible as possible.
3. Share Spanish-language pesticide information in multiple venues and situations within and beyond job sites.
4. Require updated information to be shared in an expedient fashion.
5. Collaborate with other organizations, such as U.S. Department of Agriculture, to expand broadband internet connectivity in rural areas.
6. Improve annual WPS trainings of farmworkers.

Charge Question 2. OCSPP: Input on Building a New Environmental Justice Indicator

The following indicators would enable EPA to assess its performance in ways that more meaningfully address the experiences of farmworkers:

1. Diseases and disorders associated with pesticide exposure.
 - Childhood asthma rates
 - Cancer rates
 - Birth defects
 - Others
2. Reported pesticide illnesses
3. Pesticide use
4. Resources devoted to WPS inspections and inspectors
5. Stringency of pesticide enforcement
6. Pesticide monitoring studies

Charge Question 3. OCSPP: Strengthening EPA’s Pesticide Exposure Assessment of Legally Working Children in Agriculture

1. Throughout its pesticide programming, EPA needs to account for the fact that children regularly work in agriculture.
2. Throughout its pesticide programming, EPA needs to account for the fact that children of immigrant farmworkers are more likely than other children to work in agriculture.
3. Throughout its pesticide programming, EPA must account for the fact that children of immigrant farmworkers are disproportionately exposed to pesticides.
4. EPA must account for the fact that pesticide exposures among farmworkers and their children are under-reported relative to those of other people working in agriculture.
5. EPA must account for the fact that children of immigrant farmworkers are more vulnerable than other children to the effects of exposure to pesticides due to the many intersecting forms of stress they experience.
6. In accordance with the principle of cumulative impact assessment, EPA needs to account for these factors when assessing the risks of pesticides.
7. EPA should create pesticide education programming that would be implemented in middle schools, high schools, and other spaces frequented by children to educate children about the harms of pesticides.
8. EPA should create a special WPS training geared toward children.
9. EPA’s Office of Research and Development should prioritize researching children’s exposures and vulnerabilities to pesticides.
10. EPA should work with other agencies to expand afterschool programming for farmworkers’ children.
11. EPA should work with other agencies to expand health care in rural communities.
12. EPA needs to work with other agencies, perhaps through an interagency task force, to help shield farmworker families—and especially children—from pesticide exposures and other workplace issues that affect them throughout their lives.

Charge Question 4. Expand or Enhance Training for Inspectors Who Conduct Worker Protection Standard Inspections

1. Conduct unannounced spot inspections unless research indicates that announcing an inspection in advance does not affect the inspection findings.
2. Ensure that all farms are being inspected.
3. Educate employers about their responsibilities.
4. Create ways for workers to feel comfortable making complaints.
5. Ensure appropriate timing of inspections.
6. Improve the processes for investigating reports of pesticide and labor law violations.
7. Collect better data on compliance with the WPS.
8. Increase fines for violations, increase consequences for repeat offenders, and track repeat violators.
9. Hire more inspectors who are fluent in Spanish and, where appropriate, other languages commonly spoken among farmworkers.
10. Ensure that inspectors are well trained and motivated to continually improve.
11. Provide more resources for inspectors, inspections, and investigations.
12. Provide stronger oversight over states’ compliance with WPS.
13. Implement stronger restrictions on the use of the most toxic pesticides.

Appendix 3. NEJAC Members and Affiliations

For NEJAC member biographies, see <https://www.epa.gov/system/files/documents/2023-12/nejac-bios-december-2023.pdf/>.

NEJAC Co-chairs

Na'Taki Osborne Jelks | Co-Founder and Board Chairperson, West Atlanta Watershed Alliance and Proctor Creek Stewardship Council

Jerome Shabazz | Executive Director, JASTECH Development Services Inc. and Overbrook Environmental Education Center

NEJAC Members

Cemelli de Aztlan | Community Organizer, La Mujer Obrera

April Karen Baptiste | Professor, Environmental Studies and Africana and Latin American Studies Colgate University

Sandy Bonilla | Founder, Urban Conservation Corps of the Inland Empire

Joy Britt | Senior Project Manager, Chignik Bay Tribal Council

Ambrose F. Carroll, Sr. | Senior Pastor, Green The Church

Scott Clow | Environmental Programs Director, Ute Mountain Ute Tribe

Leticia Colon de Mejias | President and Founder, Green ECO Warriors

Ximena Cruz Cuevas | Material Management Specialist, Oregon Department of Environmental Quality

Laprisha Berry Daniels | Executive Director, Detroiters Working for Environmental Justice

Jarod Davis | Global Policy Director for Social Equity, Dow Inc.

John Doyle | Water Quality Director, Little Big Horn College

Jan Marie Fritz | Professor, University of Cincinnati; Distinguished Visiting Professor, University of Johannesburg; and Adjunct Professor, Taylor's University (Malaysia)

Yvonka M. Hall | Executive Director, Northeast Ohio Black Health Coalition

Jill Lindsey Harrison | Associate Professor, Dept. of Geography, University of Colorado Boulder

Loren Hopkins | Chief Environmental Science Officer, City of Houston Health Department

Lisa Jordan | Director & Clinical Professor of Law, Tulane Environmental Law Clinic

Andrew Kricun | Senior Fellow, US Water Alliance

Richard Mabion | Founder/Operator, Building A Sustainable Earth Community

Nina McCoy | Chairperson, Martin County Concerned Citizens

Ayako Nagano | Board Member, Common Vision

Sofia Owen | Staff Attorney & Director, Environmental Justice Legal Services/Alternatives for Community & Environment

Briana Parker | Senior Director, Justice40 Accelerator, Elevate Energy

Ben Pauli | Associate Professor, Department of Liberal Studies, Kettering University

Jonathan Perry | President, Becenti Chapter

Rosina Philippe | Council Elder, Atakapa Ishak Chawasha Tribe

Millie Piazza | Office of Equity and Environmental Justice Program Manager, Washington State Department of Ecology

Jacqueline Shirley | Tribal Utility Consultant, Rural Community Assistance Corporation

Pamela Talley | Executive Director, Lewis Place Historical Preservation, Inc.

Brenda Torres Barreto, | Executive Director, San Juan Bay Estuary Program

Sandra Whitehead | Associate Professor & Sustainable Urban Planning Program Director, George Washington University

Lynn Zender | Executive Director, Zender Environmental Health and Research Group

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