



The Needs of Farmworkers in Washington State *Preliminary Report*

The 2022 Washington State Legislature directed the Washington State Institute for Public Policy (WSIPP) to conduct a study of the needs of farmworkers in Washington. WSIPP was directed to work with Latino-led community organizations throughout the state to administer a survey of farmworkers focusing on workplace health and safety, wages, and retaliation for asserting their rights. WSIPP was also directed to examine how various state and federal agencies work together in enforcing laws and providing services related to farmworkers. Finally, WSIPP was tasked with providing options for improved coordination and service delivery.

This preliminary report is the first in a two-part series in response to this assignment. This report describes the needs of farmworkers in the United States to contextualize the forthcoming survey and examination of state agencies.

This preliminary report is organized as follows: [Section I](#) provides background information on farmwork and farmworkers; [Section II](#) reviews the research literature on challenges faced by US farmworkers; [Section III](#) overviews our plan for conducting the survey; and [Section IV](#) describes the next steps for the project.

Summary

This report provides a brief overview of farmwork and farmworkers in the US, including a comparison of farmworkers to the general US workforce and a discussion of how farmwork differs from most other occupations. We also discuss agriculture and farmwork in Washington.

We summarize the existing research literature on challenges many farmworkers face related to workplace health and safety, labor and pay, immigration, and socioeconomics in the US. For each issue covered, we describe the impacts and pervasiveness.

Finally, we outline our plan for the survey required by the legislation that will be conducted in Washington in 2024. We discuss the size and scope of the survey, the procedure for each interview, partnering organizations, topics covered, and measures taken to preserve respondent confidentiality. We conclude with a description of work already completed on the project.

The legislature specifically directed WSIPP to study the needs of farmworkers and relevant policies and state agency programs. WSIPP was not asked to examine the perspective of farm owners or employers. This limitation will be discussed in the final report.

Suggested citation: Briar, C., & Miller, M. (2023). *The needs of farmworkers in Washington State: Preliminary report*. (Document Number 23-12-4101) Olympia: Washington State Institute for Public Policy.

A final report on the survey results, state agency coordination, and potential policies to address coordination will be published on June 30, 2025.

The legislature specifically directed WSIPP to study the needs of farmworkers and relevant policies and state agency programs. WSIPP was not asked to examine the perspective of farm owners or employers. This limitation will be discussed in the final report.

Exhibit 1 Legislative Assignment

- i. *[An appropriation is made....] solely for a comprehensive study to assess specific needs of farmworkers in the state in order to help policymakers determine whether those needs are being met by state administered programs, policies, and statutes. The [Washington State Institute for Public Policy] must consult with farmworker advocacy organizations, state agencies administering programs and policies impacting farmworkers, and nonprofit organizations that work directly with farmworkers.*
- ii. *As part of its information gathering, the institute must hear from farmworkers, either directly or through the nonprofit organizations, regarding farmworkers' experiences and working conditions. These personal, real-life experiences from farmworkers must be based on informal interviews or surveys conducted by Latino nonprofit organizations that have well-established connections and relationships with farmworkers.*
- iii. *The study must focus on needs related to health and safety in the workplace, payment of wages, and preventing harassment and discrimination of, and retaliation against, farmworkers for asserting their rights regarding health and safety standards, wage and hour laws, and access to services.*
- iv. *The study must include:*
 - A. *An examination of how the relevant state agencies coordinate with each other and federal agencies in administering and enforcing the various laws, policies, and programs, and of the agencies' education and outreach to farmworkers regarding farmworkers' rights and protections;*
 - B. *A review of available data from, and research of, programs that are intended to increase health and safety outcomes for farmworkers and that are intended to provide farmworkers access to services and benefits; and*
 - C. *Options on ways to improve agency coordination and the effectiveness of reviewed programs.*
- v. *It is the intent of the legislature to provide funding in the 2023-2025 fiscal biennium budget for the institute to complete the report by June 30, 2025, with a preliminary report submitted by December 1, 2023.*

[Engrossed Substitute Senate Bill 5693](#)
[Chapter 297, Laws of 2022](#)

I. Farmworkers and Agriculture in the US and Washington State

Farmwork and Farmworkers

For this study, we define a farmworker as any non-supervisory, non-farm-owning individual employed for at least part of the year in agriculture. This includes crop production, livestock production, and working in food packing and shipping houses.

Farmworkers involved in crop production work on farms, orchards, or greenhouses. Their tasks can include planting, tending to, and harvesting vegetables, fruits, nuts, or grains. They till and weed soil, apply pesticides, and load produce for transportation.¹ In livestock production, farmworkers feed, clean, and treat animals such as cattle, sheep, or poultry for disease, harvesting meat, fur, skin, eggs, milk, or honey.² Farmworkers prepare food for transportation and consumption in packing houses or sheds by sorting, cleaning, and treating produce with chemicals and packing it for transportation to markets. Virtually all farmwork is physically demanding, involving rapid hand movements, lifting, bending, squatting, reaching, and/or cutting.

Farmwork is highly seasonal as farm labor demand is largely driven by what crops are grown and the time of year. Some farmworkers, termed migrant seasonal farmworkers, travel between locations to follow these changing labor demands throughout the year.³

Agriculture in Washington

Agriculture is a major industry in Washington, with farms in the state generating more than \$20 billion per year in revenue.⁴ Washington's top agricultural commodities include apples, milk, cattle, wheat, and potatoes. The state is the nation's top producer of apples, blueberries, hops, pears, and sweet cherries.⁵ Different regions are responsible for different types of produce. With its cooler climate, Western Washington produces berries, flowers, poultry, nursery products, and dairy. Eastern Washington is better suited to ranching, wheat, fruits, and vineyards.⁶ Other regions, like the Yakima and Wenatchee Valleys, specialize in apples, hops, and herbs.⁷

In 2022, Washington farms employed 113,174 workers, about 3% of total employment in the state.⁸ There are nearly 36,000 farms in Washington. Most (89%) of these are categorized as small, generating less than \$250,000 in revenue annually.⁹

¹ US Bureau of Labor Statistics. (2022a, April 25).

² US Bureau of Labor Statistics. (2022b, April 25).

³ US Department of Labor, Employment and Training Administration. (2022).

⁴ US Department of Agriculture, National Agricultural Statistics Service (2017).

⁵ US Department of Agriculture (2023).

⁶ Washington State Department of Commerce (n.d.).

⁷ Washington State University (n.d.) and Wenatchee Valley Visitors Information (2023).

⁸ This number is generated by eliminating farm owners and supervisors, farm management services, and farm labor contractors from total agricultural employment counts and adding workers brought on by the H-2A visa program.

⁹ Washington State Department of Commerce (n.d.).

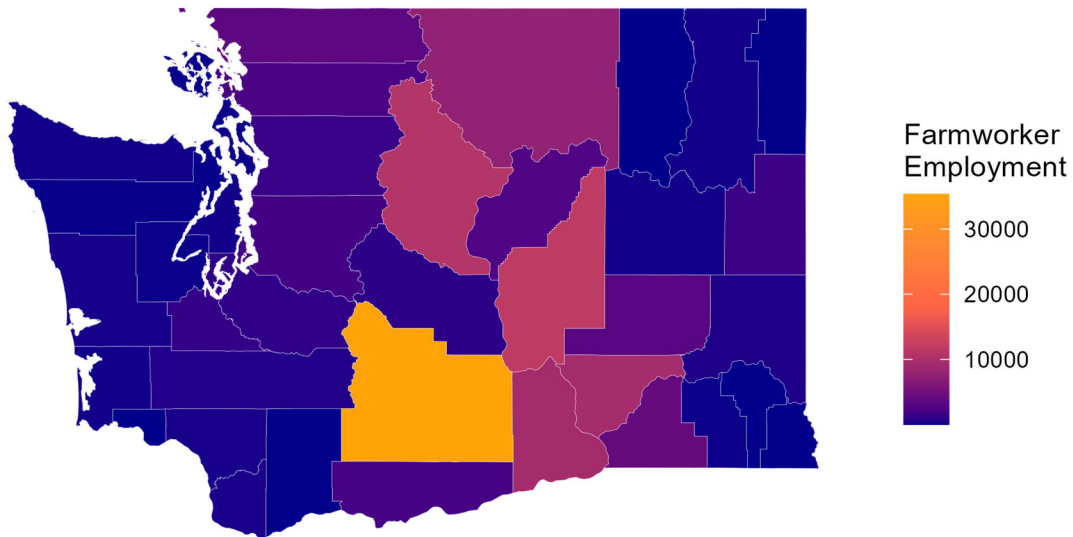
Many farms do not employ farmworkers, while larger operations may employ tens or hundreds of individuals.

As shown in [Exhibit 2](#), the distribution of farmworkers across the state is not even, with Yakima having more than three times as many farmworkers as any other county. Grant and Chelan also have over 10,000 farmworkers, while other counties like Ferry and Wahkiakum have very few. The unequal distribution of farm employment reflects different levels of agricultural activity in different parts of the state.

Unlike many other states, Washington law protects farmworkers' rights to collective bargaining protections, overtime pay, the state minimum wage (which exceeds the federal minimum), and workers' compensation.¹⁰

Exhibit 2

2022 Farmworker Employment Reported to Employment Security Department by County



Notes:

This figure is generated by eliminating farm owners and supervisors, farm management services, and farm labor contractors from total agricultural employment counts and adding workers brought on by the H-2A visa program. Source: [Washington State Employment Security Department, Data Architecture, Transformation, and Analytics \(2023\)](#).

¹⁰ Washington's overtime policy for farmworkers has had a phase in period beginning in 2022. Starting in January of 2024, farmworkers are entitled to time-and-a-half pay for

any hour worked over 40 hours per week. However, certain trades, such as dairy, are not covered. [RCW 51.12.010](#); [Final Bill Report: ESSB 5172](#); [Mikolajczyk \(n.d.\)](#); and [RCW 49.32.020](#).

II. Challenges Faced by Farmworkers in the US

The legislature directed WSIPP to work with Latino-led community organizations to administer a comprehensive survey on farmworker needs. In order to develop this survey, we examined the research literature on the challenges faced by farmworkers in the US. Though research specific to farmworkers in Washington is very limited, many of the challenges farmworkers face at the national level are likely also experienced by farmworkers in the state.

This section describes the research literature on the challenges farmworkers face in the US that we will ask Washington farmworkers about in our survey. It is important to note that the challenges discussed in this section may have numerous and complex causes. Each challenge described does not impact all farmworkers equally. This section is meant to introduce each survey topic and to provide context for its inclusion in the survey.

We present some potential actions and policies to address each challenge in [Exhibit 4](#) at the end of this section.

Work-Related Factors

Injuries and Musculoskeletal Disorders

Farmwork and agricultural occupations are among the most injury-prone jobs in the US.¹¹ In 2019, the fatal injury rate for crop production workers was more than 4.5 times the rate across all private-sector workers. Crop production workers were also 1.6 times more likely to experience non-fatal injuries requiring time away from work.¹² The physically demanding nature of farmwork and use of heavy machinery contribute to the high injury rate. Research finds that at least two-thirds of farmworkers experience work-related musculoskeletal disorders (MSDs) and injuries, like lower back pain, chronic hip pain, arthritis, osteoarthritis, and carpal tunnel syndrome.¹³ The type of injury most likely to occur for a given farmworker depends on their job.

Heat

Heat is another common health risk for farmworkers. Prolonged exposure without adequate rest, water, and shade breaks can lead to heat-related illnesses (HRIs), including heat rash, cramps, fainting, exhaustion, and heat stroke. Symptoms for these HRIs range anywhere from mild discomfort to seizure or death.¹⁴ An HRI of particular concern is acute kidney injury, a sudden, often reversible drop in kidney function brought on by dehydration.¹⁵ The rate of heat-related death for farmworkers is 20 times higher than the average civilian worker in the US.¹⁶

¹¹ Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. (2023).

¹² Bureau of Labor Statistics, U.S. Department of Labor. (2021).

¹³ Osborne et al. (2012).

¹⁴ State of California Department of Industrial Relations (2023).

¹⁵ Goyal et al. (2023).

¹⁶ Centers for Disease Control (2008).

Smoke

Due to most of the work being outdoors, farmworkers are more likely to be exposed to wildfire smoke than other occupations. The immediate effects of exposure to wildfire smoke include trouble breathing, eye/ear/nose irritation, chest aches, asthma attacks, malaise, and increased heart rate.¹⁷ More severe impacts have been found in individuals with respiratory conditions such as asthma or Chronic Obstructive Pulmonary Disorder (COPD).¹⁸ Exposure to wildfire smoke is expected to grow in the coming decades.¹⁹

Pesticides

Toxic pesticides pose a direct danger to farmworkers applying them, entering recently sprayed fields, or even those working nearby if wind or evaporation causes pesticides to drift.²⁰ Pesticides can drift into living and sleeping quarters if workers live on-site or contaminate food and water.²¹ Farmworkers can also carry pesticides home on their clothes and expose family members or cohabitants. For example, a study of farmworker households with young children in Yakima Valley found that more than 80% of farmworker homes and vehicles had pesticide exposure.²²

Long-term exposure to pesticides has been connected to cancer, hormone disruption, asthma, and congenital disabilities.²³ Acute pesticide poisonings occur when individuals ingest large amounts of pesticides in a short time frame (days or hours) and can result in mild symptoms such as headache, nausea, and fatigue. Severe poisonings can cause fluid in the lungs, seizures, and death.²⁴ Past research has estimated that farmworkers in the US suffer 10,000-20,000 acute pesticide poisonings per year.²⁵

COVID-19

During the COVID-19 pandemic, farmworkers were far more likely to become infected than the general US population. Research has also shown that areas with a greater percentage of farmworkers relative to the total population experienced significantly more deaths from COVID-19.²⁶ The nature of farmwork makes many COVID-19 safety practices difficult. Often, both outdoor and indoor farmworkers work close together, do not have regular access to handwashing stations, use crowded transportation to get to worksites, and live in crowded quarters.²⁷ These risks are exacerbated by a general lack of health insurance and healthcare access, cultural differences from the US healthcare system, and, for undocumented workers, fear of deportation.²⁸

¹⁷ Centers for Disease Control and Prevention (2013).

¹⁸ Yao et al. (2016).

¹⁹ Marlier et al. (2022).

²⁰ Ibid and National Pesticide Information Center (2022).

²¹ Deziel et al. (2015).

²² Coronado et al. (2004).

²³ Kim et al. (2017).

²⁴ New York State Department of Health (2017).

²⁵ Calvert et al. (2008).

²⁶ Lewnard et al. (2021).

²⁷ Fielding-Miller, Sundaram & Brouwer (2020).

²⁸ Matthew et al. (2021).

Labor Issues

Wage Theft

Wage theft occurs when workers are paid less than they were promised or less than is required by federal and state law. In Washington, wage theft can also occur when farmworkers are not paid for breaks as state law requires.²⁹

Farmworkers experience wage theft more frequently than most other professions. Analysis conducted by the Economic Policy Institute in 2020 found that between 2000 and 2019, the Wage and Hour Division of the US Department of Labor (USDOL) conducted over 31,000 investigations and that employers owed farmworkers \$76 million in unpaid wages.³⁰ In addition, studies have found anywhere from 18%-90% of farmworkers have regularly worked for less than minimum wage.³¹ Being paid a piece-rate wage (by volume or weight of produce individually harvested) is a risk factor for being paid less than minimum wage. While piece-rate pay allows farmworkers to increase their effort if they wish to earn more, earnings can easily fall below federal or state minimum wages.³²

Retaliation for Asserting Rights

Employer retaliation occurs when agricultural employers punish employees to discourage them from reporting employment-related issues, using government services such as workers' compensation, or exercising other rights afforded by the law.

Examples of retaliation include giving targets of retaliation or their community less preferable work assignments, docking pay, not allowing rest, water, or bathroom breaks, termination of employment, and, in extreme cases, physical assault.³³

Fear of retaliation is common among farmworkers. Evidence suggests that this fear discourages workers from raising concerns about working conditions.³⁴ Ultimately, the number of complaints made by farmworkers, the extent of retaliation against farmworkers, and its actual impact on complaints by farmworkers are not known.

Immigration-Related Factors

Fear of Deportation

Fear of being deported is commonly reported amongst undocumented farmworkers in the literature. Deportation carries with it threats of lost work, income, and community.³⁵ Family separation, in particular, has been recognized as being impactful, frequently leading to food and housing instability in families with children even when one parent is still at home.³⁶ Fear of deportation means undocumented farmworkers are less likely to report safety issues and injuries at work, leading to less safe working conditions.³⁷ Health impacts have also been associated with fear of deportation.³⁸

²⁹ WAC 296-131-020.

³⁰ Costa et al. (2020).

³¹ Farmworker Justice (2015).

³² Ibid.

³³ US Equal Employment Opportunity Commission (n.d.) and United State Department of Justice (2008).

³⁴ Brown et al. (2022).

³⁵ Valdez et al. (2013).

³⁶ Chaudry et al. (2010).

³⁷ Liebman et al. (2016).

³⁸ Torres et al. (2018).

H-2A System

The H-2A temporary agricultural guestworker visa program allows non-immigrant foreign workers to find jobs in agriculture in the US for a limited or seasonal period. To apply for H-2A workers, employers must first prove to the USDOL's Employment and Training Administration that they cannot find enough domestic workers to fill the positions in question and that the influx of workers will not adversely affect domestic workers' wages or working conditions.³⁹ Employers must provide H-2A workers with housing and transportation to their jobs, locality-specific wages, and an adequate chance to work during their employment. Use of the H-2A program has increased dramatically in the past decade, with the number of visas granted annually more than tripling between 2010 and 2019.⁴⁰ In Washington, between 2012 and 2022, the number of H-2A workers increased nearly fivefold.⁴¹

The impacts of the H-2A system on workers hired through it are not straightforward. On the one hand, H-2A workers are guaranteed wages, housing, and transportation, and they can obtain their work authorization and visa more easily than other non-citizen workers. However, fees charged by labor brokers in Mexico and Latin America to match potential farmworkers to US employers force many to take out high-interest loans that they must work to pay off.⁴²

H-2A visas are also employer-specific, meaning that not only can an employer cancel a worker's visa without warning and have them deported, but a worker also cannot look for employment elsewhere without losing their visa.⁴³ H-2A workers also risk not being hired back the following year, making it particularly hard for these workers to advocate for themselves to their employers when mistreatment, injury, or violations of protections set out by the program occur.⁴⁴

The H-2A system also has implications for domestic workers. While employers are required to demonstrate that there are an insufficient number of domestic workers to fill a position, they can find ways to dissuade domestic workers from applying by making advertised work conditions unappealing or difficult to comply with.⁴⁵ H-2A workers' dependency on their employers for visas also prevents them from unionizing, disrupting collective bargaining power for all workers. In extreme cases, employers may even fire domestic workers and replace them with H-2A workers to disrupt organization efforts or lower labor costs.⁴⁶

Socioeconomic and Societal Factors

As shown in [Exhibit 3](#), compared to the broader US workforce, farmworkers are more likely to be born outside the US, not have US citizenship, and be undocumented. This section further describes socioeconomic and societal factors that impact farmers.

³⁹ US Department of Labor, Wage and Hour Division. (n.d.).

⁴⁰ Simnitt & Castillo (2021).

⁴¹ Washington State Employment Security Department, Data Architecture, Transformation, and Analytics (2023).

⁴² While employers are required to reimburse 50% of H-2A workers travel and food expenses, this often does not cover

debts owed to labor brokers. Southern Poverty Law Center. (2013).

⁴³ Ibid.

⁴⁴ Palacios & Rubio (2011).

⁴⁵ Guernsey (2007).

⁴⁶ Ibid and Jordan (2021).

Exhibit 3

Comparing Farmworker Demographics to the Broader US Workforce (2020)

Characteristic	Total workforce	Farmworkers
Total (millions)	160.7	2.1
Avg. hourly wage	\$29.36	\$13.59
% Female	47	34
% Born in US	83	30
% Hispanic	18	78
% Citizen	91	36
% Documented*	97	56
% Below poverty line	11	20
% Health insurance*	91	48
% HS diploma	92	33
% Some college	67	14

Notes:

* Statistic pertains to entire US population rather than just the US labor force.

All farmworker statistics are from US Department of Labor, Employment and Training Administration. (2022, January).

Findings from the National Agricultural Workers Survey (NAWS) 2019–2020: A Demographic and Employment Profile of United States Farmworkers. Report No. 16. Sources for the statistics on the general US workforce in this table can be found in [Exhibit A1 of Appendix I](#).

Poverty

Farmworkers in the US are generally considered to be socioeconomically vulnerable. As shown in [Exhibit 3](#), around 20% of all farmworker families in 2020 had income levels below the poverty line, almost double the national rate. Other studies have found significantly higher poverty rates in some areas.⁴⁷ Poverty among farmworkers has been linked to food insecurity, obesity, and poor physical and mental health, among many other issues.⁴⁸

⁴⁷ Cason et al. (2004).

⁴⁸ Borre et al. (2010) and Pulgar et al. (2016).

⁴⁹ Serrano (2012).

⁵⁰ Costa (2021).

⁵¹ Washington State Employment Security Department, *Data Architecture, Transformation, and Analytics* (2023) and Washington State Employment Security Department (2023).

Poverty also impacts farmworkers' ability to advocate for themselves because of the fear of losing income if their employers retaliate against them.⁴⁹

Low wages are largely to blame for the high incidence of poverty. Analysis by the Economic Policy Institute finds that farmworkers in 2020 earned about half the average wage of all workers in the country. For H-2A workers, the national average wage was even lower.⁵⁰ In Washington in 2022, average agricultural wages were \$18.00 per hour, substantially lower than the statewide average of \$40.47 per hour.⁵¹ However, due to a lack of demographic data on Washington farmworkers, it is impossible to say whether other national trends hold within the state.

The seasonality and general unpredictability of employment in the industry and fewer legal protections under the National Labor Relations Act (NLRA) and Fair Labor Standards Act (FLSA) are noted as other factors contributing to poverty among farmworkers.⁵²

Food Access

Many farmworkers regularly struggle to access food or high-quality, culturally relevant food. The prevalence of food insecurity among farmworkers has been estimated to be between 20% and 80%.⁵³ Poverty, not having reliable transportation, having children in the household, and low educational attainment have been shown to be associated with food insecurity among farmworkers.⁵⁴

⁵² Wainer (2011).

⁵³ Food insecurity is defined by the USDA as not having enough food for an active, healthy lifestyle at all times. This may mean not being able to access diverse, quality foods or enough of any food. US Department of Agriculture, *Economic Research Service* (2023) and Ip et al. (2015).

⁵⁴ Hill et al. (2011) and Quandt et al. (2004).

Even when farmworkers have access to food, it may not be culturally appropriate as many farmworkers are not US-born and may be used to foods not typically found in grocery stores.⁵⁵ Food insecurity and hunger among farmworkers have been linked to various adverse health outcomes, including diabetes, depression, learning disorders, gastrointestinal infections, and are associated with obesity.⁵⁶

Healthcare

Farmworkers have a very low rate of healthcare usage despite working in an injury-prone industry.⁵⁷ As shown in [Exhibit 3](#), only 48% of farmworkers have health insurance compared to 90% of the general population. Language barriers, inability to take time off work, low wages, and lack of transportation are often cited as causes for not seeking care.⁵⁸

Low healthcare utilization has adverse long-term impacts on farmworkers. The widespread lack of primary care in the farmworker community means that chronic conditions such as diabetes or asthma can go undiagnosed, leading to complications from non-treatment.⁵⁹ This, in turn, leads to more urgent care and emergency room visits for farmworkers and the associated higher costs for care.⁶⁰

⁵⁵ Grauel & Chambers (2014).

⁵⁶ Borre et al. (2010) and Weigel et al. (2007).

⁵⁷ Luo & Escalante (2018).

⁵⁸ Tulimiero et al. (2021).

⁵⁹ Moyce et al. (2019).

⁶⁰ Soto et al. (2023); Tulimiero et al. (2021); and Hoerster et al. (2011).

Living Conditions

Many farmworkers live in housing provided by their employers. Other farmworkers find their housing independent of an employer, competing for housing in local private markets.

Finding adequate, safe housing is a common challenge for farmworkers. Studies of the living conditions of farmworkers in the US find that their housing quality is variable but generally poor.⁶¹ Poverty and limited English proficiency mean that many farmworkers are severely hampered in finding quality housing. Issues with employer-provided and independently acquired housing occupied by farmworkers are common, including having too many residents in a facility, improper sanitation, and pest infestation.⁶²

Poor housing has been linked to injury; infectious disease transmission; exposure to pesticides and other hazardous chemicals, mold, and particulates; and mental illness among farmworkers.⁶³ Difficulty finding adequate housing, whether employer- or self-provided, can lead to farmworker homelessness.

Discrimination

Farmworkers frequently face many forms of discrimination in their work and daily lives, including discrimination based on race and ethnicity, national origin, length of stay in the US, English-speaking ability, immigration status, sex, sexual orientation, gender identity, indigeneity, and disability.⁶⁴

⁶¹ Keim-Malpass et al. (2015).

⁶² Vallejos et al. (2011).

⁶³ Arcury et al. (2012).

⁶⁴ While, in some cases, it is legal not to hire a worker because of factors such as English-speaking ability or immigration status that are required for a job, discrimination

Sexism is of particular concern, as women are often paid less and given different types of working assignments than men.⁶⁵ The most frequent source of discrimination is farmworkers' employers and supervisors.⁶⁶

Experiencing discrimination has been linked to poor physical and mental health in farmworkers.⁶⁷ It has also been shown to decrease access to jobs, safe housing, educational opportunities, and healthcare.⁶⁸

Psychological Impacts

The challenges detailed in this section can cause farmworkers to suffer psychological distress and mental illness. Farmworkers are routinely found to suffer from conditions like depression, anxiety, and suicidal ideation at rates far exceeding the general US population.⁶⁹ Poor mental health in farmworkers is associated with working conditions, social isolation, acculturation stress, poor housing, fear of deportation, food insecurity, and many other stressors.⁷⁰ Most recently, the COVID-19 pandemic has been tied to an increase in mental health issues in farmworkers.⁷¹

Solutions to Challenges Faced by Farmworkers in the US

Finally, we offer a sample of actions and policies to address each of the challenges faced by US farmworkers described in this section. We conducted an extensive review of the research literature to identify potential actions that could address the identified needs of farmworkers and selected two to three examples of potential actions for each. This is not a comprehensive list of all possible actions, nor does it constitute recommendations.

Exhibit 4 presents our findings from the research literature, organized by whether each would require action at the individual- or farm-level, action by service providers (including government agencies), or a change in state or federal policy. Actions that multiple parties can take appear in multiple columns. For instance, education about musculoskeletal disorders could be carried out by farm owners and service providers or mandated by state or federal policy. Other interventions, like national immigration reform, must be implemented at a policy level.

and harassment of employees based on these factors can occur after hiring.

⁶⁵ Fisher et al. (2022).

⁶⁶ Snipes et al. (2017).

⁶⁷ Williams et al. (2003).

⁶⁸ Ramos (2017).

⁶⁹ Hovey & Magaña (2000).

⁷⁰ Dodge (2009); Weigel et al. (2007); and Mora et al. (2016).

⁷¹ Keeney et al. (2022).

Exhibit 4

Actions to Address Featured Farmworker Challenges

Issue	Individual-/farm-level	Services	Policies
Injuries and MSDs	Protective rollover structures for tractors, ergonomics training, redesign of some tools, education about MSDs, and short breaks	Providing ergonomics trainings, education about MSDs	Requiring ergonomics trainings, education about MSDs, and requiring rollover structures
Heat	Trainings on dangers of heat and first aid, taking cooling and water breaks, providing sports drinks, and improving worker control over working conditions	Providing trainings on dangers of heat and first aid	Requiring trainings on dangers of heat and first aid, mandating cooling and water breaks
Smoke	Monitoring of conditions and stopping work when hazardous, respiratory protection such as masks	Education for farm owners and farmworkers	Requiring training for farm owners and farmworkers, mandating work stoppages during certain conditions, and requiring respiratory protection
Pesticides	Use of protective equipment (clothing, goggles, and respirators), washing hands and showering after exposure	Applicator and bystander education	Requiring applicator and bystander education, mandating use of protective equipment
COVID-19	Use of masks or face shields	Free testing/vaccinations clinics, partnerships between state and local governments, healthcare providers, advocacy organizations	Requiring protective equipment
Wage theft	Worker organization around workplace issues	Teaching workers to identify wage theft, track hours, and file claims, worker organization around workplace issues	Holding employers accountable for wage theft by farm labor contractors
Retaliation		Connecting farmworkers to reporting platforms	Providing reporting mechanisms that are easily accessible to farmworkers, enforcement of anti-retaliation rules
H-2A System			Increasing enforcement by using data on violations to analyze where violations are being suppressed by employers, national reforms such as unbinding workers to single employer, increased inspections, and employer accountability
Fear of deportation		Resources to help treat impacts such as social isolation, low quality housing, and poor mental health	National immigration reform

Exhibit 4 (continued)

Actions to Address Featured Farmworker Challenges

Issue	Farm-level	Services	Policies
Poverty		Reducing financial burdens for food, healthcare, housing, etc.	Offering programs that reduce financial burdens for food, healthcare, housing, etc., mandating minimum wages for agricultural workers or raising exists minimums
Food access		Foodbanks, transportation options to places with diverse foods, co-operative food purchasing, and community gardens	
Healthcare access		Reducing barriers to access: providing transportation, staying open late or offering weekend appointments, culturally appropriate services, sliding fee scales, and increasing insurance rates	Increasing insurance rates through policies aimed at reducing cost and improving access
Living conditions		Programs to improve rural housing supply/quantity, advocacy education	Regulation and enforcement of farmworker housing standards, increased inspections, and housing vouchers
Discrimination		Free/low-cost legal representation, worker to worker rights education campaigns.	Increasing oversight, supplying accessible reporting mechanisms
Psychological		Mental health prevention, assessment, and treatment services, targeting at-risk individuals, support groups on self-esteem and -efficacy, education and outreach, materials and workshops for farmworker camps, and mobile mental health clinics	Increasing regulation of farmworker housing and enforcement as a means of alleviating underlying stressors

Notes:

MSD = Musculoskeletal disorders.

Sources for solutions presented in this table can be found in [Exhibit A2](#) in [Appendix I](#).

III. Overview of Plan for Survey of Farmworkers

As discussed previously, while the demographics and challenges farmworkers face have been researched nationally, information on farmworkers in Washington is limited. The survey required by the legislation for this study (see [Exhibit 1](#)) thus constitutes a significant effort to understand Washington's farmworkers' identities, experiences, and needs more comprehensively.

WSIPP was directed to work with a Latino nonprofit organization to administer the survey, and to consult with farmworker advocacy organizations, state agencies, and nonprofit organizations that work directly with farmworkers as part of our information gathering.

In this section, we outline our plan for the survey and discuss the work already completed. We also describe the organizations we will partner with and the outreach that has been done to meet the requirements of the legislative directive.

[Survey Overview](#)

The survey will be conducted in March through October of calendar year 2024, covering the growing seasons of most crops in Washington when labor demands for most forms of farmwork are at their highest. All non-supervisory farmworkers 18 years and older engaged in crop production, livestock production, and food packing will be considered eligible to take the survey.

We will survey at least 200 farmworkers in the state. The survey will be available in Spanish and English with limited interpretation for Central American indigenous languages. We have identified three main regions for the survey: the Yakima Valley, the Wenatchee Valley, and the Whatcom/Skagit County area. Locations outside these areas will be covered on an as-able basis.

[Survey Procedure](#)

The survey will be conducted via face-to-face interviews by trained surveyors interfacing one-on-one with farmworkers in neutral community spaces. Participants will be recruited as they show up at these community spaces and by outreach within each area where the survey takes place. The entire survey interaction will take approximately 30 minutes. Surveyors will first inform respondents of their rights while taking the survey and provide them with an informational sheet with contact information if they have concerns. Surveyors will read survey questions directly from a script after verbally confirming that respondents are at least 18 years old and have been employed in farmwork in Washington in the previous two years. They will record responses to each question on a hard copy of the survey using a pen or pencil. Surveyors will be the only ones to mark the survey form during the interview.

Upon completing the survey, respondents will be given a \$30 reward in an envelope. The back of the envelope will contain a statement that respondents will sign to confirm their receipt of the reward. These envelopes will then be securely stored to ensure that respondent identities are not revealed. There will be no mutual identifiers between the envelope with respondents' signatures and their responses so that no connection can be made by anyone between their identity and responses. The surveyors will then thank respondents for their time, ask if they have any questions, and the interview will conclude.

Partners

WSIPP will contract directly with two organizations in Washington State to conduct the survey.

Comunidad para el Avance Familiar Educativo (CAFÉ) is a Wenatchee, Washington-based, Latino-led non-profit organization that seeks to advance families and communities through education. They administer various programs in the Wenatchee area focused on family education, community participation, leadership, and environmental justice. WSIPP selected CAFÉ after submitting the most favorable bid in an open bidding process between June and August 2023. Members of CAFÉ or subcontracted organizations will travel throughout Washington to conduct the survey. CAFÉ fulfills the requirement to work with a Latino-led nonprofit organization.

The Social and Economic Sciences Research Center (SESRC) at Washington State University has over 50 years of experience conducting surveys and other types of research on various sociological topics. SESRC will provide training courses for all surveyors on neutrality and confidentiality.

Survey Topic Coverage

The questions for survey respondents are largely derived from the legislation for this study. The specific questions in the survey were developed after an extensive review of the research literature on issues faced by farmworkers in Washington and the US, as described in [Section II](#).

Questions are also informed by outreach to community organizations, largely Latino-led, that work directly with farmworkers throughout the state. The survey itself was reviewed by a number of these organizations from June to August of 2023, and their suggestions and edits were incorporated where possible. Topics covered by the survey are presented in [Exhibit 5](#).

First, respondents will be asked about their background and demographics, such as age, sex, and ethnicity. Next, the survey will cover health and safety in the workplace, issues with the payment of wages, access to government services, and harassment and retaliation against farmworkers for asserting their rights concerning any other topics. Finally, questions will ask more about respondents' experiences with food insecurity, poverty, and healthcare.

Exhibit 5
Survey Topic Coverage

Topic	Coverage
Background	<ul style="list-style-type: none"> • Languages spoken • Country of birth, age, sex, race, and ethnicity • Location in Washington of employment, years of experience doing farmwork in Washington • H-2A status • Housing type, distance to work, employer provided
Health and safety in the workplace	<ul style="list-style-type: none"> • Heat and smoke • Access to water, toilets, and handwashing stations • Work related injuries • Use of pesticides and safety • Any health and safety training received
Wage and hour issues	<ul style="list-style-type: none"> • Frequency and mode of pay (hourly, weekly, piece-rate) • Usual hours worked and overtime pay • Timeliness of pay and wage theft
Use of government services	<ul style="list-style-type: none"> • Use of government services, including finding work, unemployment, help with immigration status or visa, filing workers' compensation or unpaid wages claims, obtaining medical coverage or training, or COVID relief • Whether or not a community member or organization assisted
Harassment and retaliation	<ul style="list-style-type: none"> • Experience with reporting workplace safety, pay, or housing (if employer provided) issues • Reason for not reporting if issue witnessed • Differential treatment after reporting • Harassment or retaliation for submitting workers' compensation claim
Supplemental issues	<ul style="list-style-type: none"> • Food scarcity • Housing issues • Healthcare coverage and use

Work Completed

WSIPP has made significant progress towards the implementation of the survey in 2024. This project began in January 2023 with a broad outreach effort to organizations across the state that work with farmworkers. This included business and education advocates, healthcare providers, legal services, farmworker unions, and non-profits connecting farmworkers to resources. Our goal with these efforts was to learn about the needs of Washington's farmworkers directly from those working to meet them.

We also spoke with many state government employees who provide services to farmworkers. This included employees of the Department of Labor and Industries, Department of Health, Department of Agriculture, Department of Social and Human Services, Department of Children, Youth, and Families, the Employment Security Department, and the Attorney General's Office. From each, we learned about state government services available to farmworkers, challenges working with the farmworker community, and collaboration between agencies. Analysis of agency coordination will appear in the final report of this study.

The survey, informational sheet for respondents, and compensation envelope have all been finalized. This effort benefited greatly from input from many Latino-led farmworker-serving organizations we met with during our information gathering. The survey will be translated into Spanish and checked for cultural and dialectical appropriateness by members of CAFÉ and other organizations.

WSIPP submitted an application to the IRB for the purpose of conducting this project and we received approval.

We have not conducted targeted outreach to farm owners or agricultural employer organizations, as the priority for this legislative directive is on the needs of farmworkers. The final report of this study will discuss this limitation.

IV. Conclusion

This preliminary report has provided an overview of farmwork and a summary of the research literature on challenges faced by farmworkers in the US. Farmworkers in the US are a diverse but often vulnerable population. Farmworkers are paid significantly less than the general US workforce and are more likely to experience poverty, food scarcity, housing instability, and a variety of other socioeconomic problems.

The final report, which will be published in June 2025, will cover the results of WSIPP's survey of farmworkers, as outlined in [Section III](#). The information gathered via the survey will offer a more comprehensive portrait of the identities, experiences, and needs of farmworkers in Washington than is currently available.

The final report will also feature a detailed accounting of the various actions taken by Washington State and federal government agencies to provide services to farmworkers and ensure workplace protections in the state.

Finally, the report will describe policies to deliver services to farmworkers in other states and analyze the survey results for opportunities for improved cohesion and collaboration between agencies.

The survey and this study in general are focused on the needs of farmworkers. The needs of farm owners or employers will not be explicitly examined within this study effort. The final report will discuss this limitation.

Appendices

The Needs of Farmworkers in Washington State: *Preliminary Report*

Appendices

I.	Sources for Exhibits.....	19
II.	Citations Referenced in the Report.....	22

I. Sources for Exhibits

Exhibit A1

Sources used in Exhibit 3

Characteristic	Sources for total workforce
Total (millions)	US Bureau of Labor Statistics. (2021). <i>Labor Force Statistics from the Current Population Survey</i> .
Avg. hourly wage	U.S. Bureau of Labor Statistics. (2023). <i>Average Hourly Earnings of All Employees, Total Private</i> .
% Female	US Bureau of Labor Statistics. (2021). <i>Labor Force Statistics from the Current Population Survey</i> .
% Born in US	US Bureau of Labor Statistics. (2023). <i>Foreign-Born Workers: Labor Force Characteristics</i> .
% Hispanic	US Bureau of Labor Statistics. (2021). <i>Labor force characteristics by race and ethnicity, 2020</i> . Report No. 1095.
% Citizen	American Immigration Council. (2021). <i>Immigrants in the United States</i> .
% Documented*	American Immigration Council. (2021). <i>Immigrants in the United States</i> .
% Below poverty line	US Bureau of Labor Statistics. (2022). <i>A profile of the working poor</i> . Report No. 1099.
% Health insurance*	US Census Bureau. (2021). <i>Health insurance coverage in the United States: 2020</i> . Report No. P60-274.
% HS diploma	US Bureau of Labor Statistics. (2023). <i>Educational attainment for workers 25 years and older by detailed occupation</i> .
% Some college	Hodge, N., Andreason, S., & Van Horn, C.E. (2023). <i>The labor market, then and now: The first two decades of the 21st century</i> . Federal Reserve Bank of Atlanta.

Note:

* Statistic pertains to entire US population rather than just the US labor force.

Exhibit A2
Sources for Exhibit 4

Issue	Sources
Injuries and MSDs	Naeini, H.S., Karuppiah, K., Tamrin, S.B., & Dalal, K. (2014). Ergonomics in agriculture: an approach in prevention of work-related musculoskeletal disorders (WMSDs) . <i>Journal of Agriculture and Environmental Sciences</i> , 3(2), 33-51; Singh, S., & Arora, R. (2010). Ergonomic intervention for preventing musculoskeletal disorders among farm women . <i>Journal of Agricultural Sciences</i> , 1(2), 61-71.
Heat	Smith, D.J., Ferranti, E.P., Hertzberg, V.S., & Mac, V. (2021). Knowledge of heat-related illness first aid and self-reported hydration and heat-related illness symptoms in migrant farmworkers . <i>Workplace Health & Safety</i> , 69(1), 15-21; Bethel, J. W., & Harger, R. (2014). Heat-related illness among Oregon farmworkers . <i>International Journal of Environmental Research and Public Health</i> , 11(9), 9273-9285; Fleischer, N.L., Tiesman, H.M., Sumitani, J., Mize, T., Amarnath, K.K., Bayakly, A. R., & Murphy, M.W. (2013). Public health impact of heat-related illness among migrant farmworkers . <i>American Journal of Preventive Medicine</i> , 44(3), 199-206; Jackson, L.L., & Rosenberg, H.R. (2010). Preventing heat-related illness among agricultural workers . <i>Journal of Agromedicine</i> , 15(3), 200-215 Courville, M.D., Wadsworth, G., & Schenker, M. (2016). We just have to continue working": Farmworker self-care and heat-related illness . <i>Journal of Agriculture, Food Systems, and Community Development</i> , 6(2), 143-164.
Smoke	Riden, H.E., Giacinto, R., Wadsworth, G., Rainwater, J., Andrews, T., & Pinkerton, K.E. (2020). Wildfire smoke exposure: awareness and safety responses in the agricultural workplace . <i>Journal of Agromedicine</i> , 25(3), 330-338; Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. (2023). Outdoor Workers Exposed to Wildfire Smoke ; California State Department of Industrial Relations. (2021). Protecting Outdoor Workers Exposed to Smoke from Wildfires .
Pesticides	Quandt, S., Arcury, T., Austin, C., & Saavedra, R. (1998). Farmworker and farmer perceptions of farmworker agricultural chemical exposure in North Carolina . <i>Human Organization</i> , 57(3), 359-368; Oregon State Occupational Safety and Health Administration. (n.d.). Personal Protective Equipment: Selecting the Right PPE for Pesticide Use . Publication No. 440-1018; Quandt, S.A., Hernández-Valero, M.A., Grzywacz, J.G., Hovey, J.D., Gonzales, M., & Arcury, T.A. (2006). Workplace, household, and personal predictors of pesticide exposure for farmworkers . <i>Environmental Health Perspectives</i> , 114(6), 943-952.
COVID-19	Matthew, O.O., Monaghan, P.F., & Luque, J.S. (2021). The novel coronavirus and undocumented farmworkers in the United States . <i>New Solutions: A Journal of Environmental and Occupational Health Policy</i> , 31(1), 9-15; Liebman, A.K., Juarez-Carrillo, P.M., Reyes, I.A.C., & Keifer, M.C. (2016). Immigrant dairy workers' perceptions of health and safety on the farm in America's Heartland . <i>American Journal of Industrial Medicine</i> , 59(3), 227-235.
Wage theft	Rogers, B. (2010). Toward third-party liability for wage theft . <i>Berkeley Journal of Employment and Labor Law</i> , 31(1), 1-64; Dombrowski, L., Alvarado Garcia, A., & Despard, J. (2017). Low-wage precarious workers' sociotechnical practices working towards addressing wage theft . In Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (pp. 4585-4598).
Retaliation	Occupational Safety and Health Association. (n.d.). Recommended Practices for Anti-retaliation Programs . No. 3905.

Exhibit A2 (continued)

Sources for Exhibit 4

Issue	Sources
H-2A system	Jafari, A., Drummond, P.D.A., Nishigaya, D., Bhimani, S., Ding, A.A., Farrell, A., & Maass, K.L. (2023). Enhancing detection of labor violations in the agricultural sector: A multilevel generalized linear regression model of H-2A violation counts ; Penwill, A. (2013). H-2a Guestworker Visa Program: Facilitator of Exploitation and Labor Trafficking in the Us Ranching Industry . <i>Journal Of Public and International Affairs</i> , 52.
Fear of deportation	Ballard, S. (2022). Reducing the fear of deportation and its consequences . The Ampersand. Washington University of St. Louis; Crain, R., Grzywacz, J.G., Schwantes, M., Isom, S., Quandt, S.A., & Arcury, T.A. (2012). Correlates of mental health among Latino farmworkers in North Carolina . <i>The Journal of Rural Health</i> , 28(3), 277-285.
Food access	Quandt, S.A., Arcury, T.A., Early, J., Tapia, J., & Davis, J.D. (2004). Household food security among migrant and seasonal Latino farmworkers in North Carolina . <i>Public Health Reports</i> , 119(6), 568-576.
Healthcare access	Hoerster, K.D., Mayer, J.A., Gabbard, S., Kronick, R.G., Roesch, S.C., Malcarne, V.L., & Zuniga, M.L. (2011). Impact of individual-, environmental-, and policy-level factors on health care utilization among US farmworkers . <i>American Journal of Public Health</i> , 101(4), 685-692; North Carolina Department of Housing and Human Services, Office of Rural Health. (2023). Make Your Clinic Farmworker Friendly . North Carolina Farmworker Health Program; Luo, T., & Escalante, C.L. (2018). Health care service utilization of documented and undocumented hired farmworkers in the US . <i>The European Journal of Health Economics</i> , 19, 923-934; Keim-Malpass, J., Spears, C.R., Quandt, S.A., & Arcury, T.A. (2015). Perceptions of housing conditions among migrant farmworkers and their families: implications for health, safety and social policy . <i>Rural and Remote Health</i> , 15, 3076.
Living conditions	Arcury, T.A., Weir, M., Chen, H., Summers, P., Pelletier, L.E., Galván, L., . . . Quandt, S.A. (2012). Migrant farmworker housing regulation violations in North Carolina . <i>American Journal of Industrial Medicine</i> , 55(3), 191-204; Vallejos, Q.M., Quandt, S.A., & Arcury, T.A. (2009). The Condition of Farmworker Housing in the Eastern United States . Latino Farmworkers in the Eastern United States: Health, Safety and Justice, 37-67; American Public Health Association. (2011). Improving Housing for Farmworkers in the United States Is a Public Health Imperative .
Discrimination	Northwest Justice Project. (2023). Farmworker Unit ; Coalition of Immokalee Workers. (2020). Fair Food Program .
Psychological	Hovey, J.D., & Magaña, C. (2000). Acculturative stress, anxiety, and depression among Mexican immigrant farmworkers in the Midwest United States . <i>Journal of Immigrant Health</i> , 2, 119-131; Crain, R., Grzywacz, J.G., Schwantes, M., Isom, S., Quandt, S.A., & Arcury, T.A. (2012). Correlates of mental health among Latino farmworkers in North Carolina . <i>The Journal of Rural Health</i> , 28(3), 277-285; Ramos, A.K., Su, D., Lander, L., & Rivera, R. (2015). Stress factors contributing to depression among Latino migrant farmworkers in Nebraska . <i>Journal of Immigrant and Minority Health</i> , 17, 1627-1634; Hovey, J.D., & Magaña, C.G. (2002). Exploring the mental health of Mexican migrant farm workers in the Midwest: Psychosocial predictors of psychological distress and suggestions for prevention and treatment . <i>The Journal of Psychology</i> , 136(5), 493-513.

II. Works Cited

- Arcury, T.A., Weir, M., Chen, H., Summers, P., Pelletier, L.E., Galván, L., Bischoff, W.E., Mirabelli, M.C., & Quandt, S.A. (2012). [Migrant farmworker housing regulation violations in North Carolina](#). *American Journal of Industrial Medicine*, 55(3), 191-204.
- Borre, K., Ertle, L., & Graff, M. (2010). [Working to eat: vulnerability, food insecurity, and obesity among migrant and seasonal farmworker families](#). *American Journal of Industrial Medicine*, 53(4), 443-462.
- Brown, P., Flores, E., & Padilla, A. (2022). [Farmworker Health in California: Health in a Time of Contagion, Drought, and Climate Change](#). University of California Merced, Community and Labor Center.
- Bureau of Labor Statistics, U.S. Department of Labor. (2021, September 22). [The Economics Daily, Injuries, illnesses, and deaths in agriculture, 2015–19](#).
- Calvert, G.M., Karnik, J., Mehler, L., Beckman, J., Morrissey, B., Sievert, J., . . . Moraga-McHaley, S. (2008). [Acute pesticide poisoning among agricultural workers in the United States, 1998–2005](#). *American Journal of Industrial Medicine*, 51(12), 883-898.
- Cason, K. L., Nieto-Montenegro, S., Chavez-Martínez, A., Ly, N., & Snyder, A. (2004). [Dietary intake and food security among migrant farm workers in Pennsylvania](#). Irving B. Harris Graduate School of Public Policy Studies, University of Chicago.
- Centers for Disease Control. (2008). [Heat-Related Deaths Among Crop Workers – United States, 1992–2006](#).
- Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. (2023). [Safety](#).
- Centers for Disease Control and Prevention. (2013). [Wildfire Smoke](#).
- Centers for Disease Control and Prevention. (2020). [Agriculture workers and employers: Interim guidance from CDC and the U.S. Department of Labor](#).
- Chaudry, A., Capps, R., Pedroza, J.M., Castaneda, R.M., Santos, R., & Scott, M.M. (2010). [Facing our future: Children in the aftermath of immigration enforcement](#). Urban Institute (NJ1).
- Coronado, G.D., Thompson, B., Strong, L., Griffith, W.C., & Islas, I. (2004). [Agricultural task and exposure to organophosphate pesticides among farmworkers](#). *Environmental Health Perspectives*, 112(2), 142-147.
- Costa, D., Martin, P., & Rutledge, Z. (2020). [Federal Labor Standards Enforcement in Agriculture](#). Economic Policy Institute, No. 213135.
- Costa, D. (2021). [The Farmworker Wage Gap Continued in 2020: Farmworkers and H-2A workers earned very low wages during the pandemic, even compared with other low-wage workers](#). Economic Policy Institute.
- Deziel, N.C., Friesen, M.C., Hoppin, J.A., Hines, C.J., Thomas, K., & Freeman, L.E.B. (2015). [A review of nonoccupational pathways for pesticide exposure in women living in agricultural areas](#). *Environmental Health Perspectives*, 123(6), 515-524.
- Dodge, R. (2009). [Prevalence of Anxiety and Depression in Mexican Migrant Farmworkers: A Review of the Literature](#) (Master's thesis, Pacific University).
- Farmworker Justice. (2015). [US Department of Labor Enforcement in Agriculture: More Must Be Done to Protect Farmworkers Despite Recent Improvements](#). No. 2015-1.
- Fielding-Miller, R.K., Sundaram, M.E., & Brouwer, K. (2020). [Social determinants of COVID-19 mortality at the county level](#). *PLoS ONE* 15(10), e0240151.
- Fisher, M., Lewin, P.A., & Pilgeram, R. (2022). [Farmworkers and the gender wage gap: An empirical analysis of wage inequality in US agriculture](#). *Applied Economic Perspectives and Policy*, 44(4), 2145-2163.
- Goyal, A., Daneshpajouhnejad, P., Hashmi, M.F., & Bashin, K. (2023). [Acute Kidney Injury](#). National Institute for Health.
- Hoerster, K.D., Mayer, J.A., Gabbard, S., Kronick, R.G., Roesch, S.C., Malcarne, V. L., & Zuniga, M.L. (2011). [Impact of individual-, environmental-, and policy-level factors on health care utilization among US farmworkers](#). *American Journal of Public Health*, 101(4), 685-692.
- Keim-Malpass, J., Spears, C.R., Quandt, S.A., & Arcury, T.A. (2015). [Perceptions of housing conditions among migrant farmworkers and their families: implications for health, safety and social policy](#). *Rural and Remote Health*, 15, 3076.
- Kim, K., Kabir, E., & Jahan, S.A. (2017). [Exposure to pesticides and the associated human health effects](#). *Science of the Total Environment*, 575, 525-535.

Guernsey, A.K. (2007). [Double denial: How both the DOL and organized labor fail domestic agricultural workers in the face of H-2A](#). *Iowa Law Rev.*, 93, 277.

Grauel, K., & Chambers, K.J. (2014). [Food deserts and migrant farmworkers: assessing food access in Oregon's Willamette Valley](#). *Journal of Ethnobiology*, 34(2), 228-250.

Hill, B.G., Moloney, A.G., Mize, T., Himelick, T., & Guest, J.L. (2011). [Prevalence and predictors of food insecurity in migrant farmworkers in Georgia](#). *American Journal of Public Health*, 101(5), 831-833.

Hovey, J.D., & Magaña, C. (2000). [Acculturative stress, anxiety, and depression among Mexican immigrant farmworkers in the Midwest United States](#). *Journal of Immigrant Health*, 2, 119-131.

Ip, E.H., Saldana, S., Arcury, T.A., Grzywacz, J.G., Trejo, G., & Quandt, S.A. (2015). [Profiles of food security for US farmworker households and factors related to dynamic of change](#). *American Journal of Public Health*, 105(10), e42-e47.

Jordan, M. (2021, November 12). [Black Farmworkers Say They Lost Jobs to Foreigners Who Were Paid More](#). New York Times.

Keeney A.J., Quandt A., Flores D., & Flores L., Jr. (2022). [Work-Life Stress during the Coronavirus Pandemic among Latina Farmworkers in a Rural California Region](#). *International Journal of Environmental Research on Public Health*, 19(8), 4928.

Lewnard, J.A., Mora, A.M., Nkwocha, O., Kogut, K., Rauch, S.A., . . . Eskenazi, B. (2021). [CHAMACOS-Project-19 Study Team. Prevalence and Clinical Profile of Severe Acute Respiratory Syndrome Coronavirus 2 Infection among Farmworkers, California, USA, June-November 2020](#). *Emergent Infectious Diseases*, 27(5), 1330-1342.

Liebman, A.K., Juarez-Carrillo, P.M., Reyes, I.A.C., & Keifer, M.C. (2016). [Immigrant dairy workers' perceptions of health and safety on the farm in America's Heartland](#). *American Journal of Industrial Medicine*, 59(3), 227-235.

Luo, T., & Escalante, C.L. (2018). [Health care service utilization of documented and undocumented hired farmworkers in the US](#). *The European Journal of Health Economics*, 19, 923-934.

Marlier, M.E., Brenner, K.I., Liu, J.C., Mickley, L.J., Raby, S., James, E., . . . Riden, H. (2022). [Exposure of agricultural workers in California to wildfire smoke under past and future climate conditions](#). *Environmental Research Letters*, 17(9), 094045.

Matthew, O.O., Monaghan, P.F., & Luque, J.S. (2021). [The novel coronavirus and undocumented farmworkers in the United States](#). *New Solutions: A Journal of Environmental and Occupational Health Policy*, 31(1), 9-15

Mora, D.C., Quandt, S.A., Chen, H., & Arcury, T.A. (2016). [Associations of poor housing with mental health among North Carolina Latino migrant farmworkers](#). *Journal of Agromedicine*, 21(4), 327-334.

Moyce, S., Hernandez, K., & Schenker, M. (2019). [Diagnosed and undiagnosed diabetes among agricultural workers in California](#). *Journal of Health Care for the Poor and Underserved*, 30(4), 1289-1301.

National Pesticide Information Center. (2022). [Pesticide Drift](#).

New York State Department of Health. (2017). [Pesticide Poisoning Registry - Recognizing and Reporting Pesticide-Related Illnesses and Injuries](#).

Osborne, A., Blake, C., Fullen, B.M., Meredith, D., Phelan, J., McNamara, J., & Cunningham, C. (2012). [Prevalence of musculoskeletal disorders among farmers: a systematic review](#). *American Journal of Industrial Medicine*, 55(2), 143-158.

Palacios, S.P.I., & Rubio, K.L.A. (2011). [Guest Workers' working conditions in US farming: The example of farm workers from Tamaulipas](#). *Journal of Workplace Rights*, 15(1), 27-46.

Pulgar, C.A., Trejo, G., Suerken, C., Ip, E.H., Arcury, T.A., & Quandt, S.A. (2016). [Economic hardship and depression among women in Latino farmworker families](#). *Journal of Immigrant and Minority Health*, 18, 497-504.

Quandt, S.A., Arcury, T.A., Early, J., Tapia, J., & Davis, J.D. (2004). [Household food security among migrant and seasonal Latino farmworkers in North Carolina](#). *Public Health Reports*, 119(6), 568-576.

Ramos, A.K. (2017). [Precarious work, invisible people, unjust livelihoods: A social ecological model of migrant farmworker health in the Midwest](#) (Doctoral dissertation, Clemson University).

Rural Health Information Hub. (2021). [Rural Migrant Health](#). Federal Office of Rural Health Policy.

Serrano, A. (2012, September 21). [Bitter Harvest: U.S. Farmers Blame Billion-Dollar Losses on Immigration Laws](#). Time.

Simnitt, S., & Castillo, M. (2021). [Use of H-2A Guest Farm Worker Program More Than Triples in Past Decade](#). US Department of Agriculture, Economic Research Service.

Snipes, S.A., Cooper, S.P., & Shipp, E.M. (2017). [The only thing I wish I could change is that they treat us like people and not like animals: Injury and discrimination among Latino farmworkers](#). *Journal of Agromedicine*, 22(1), 36-46.

Soto, S., Yoder, A. M., Aceves, B., Nuño, T., Sepulveda, R., & Rosales, C. B. (2023). [Determining regional differences in barriers to accessing health care among farmworkers using the national agricultural workers survey](#). *Journal of Immigrant and Minority Health*, 25(2), 324-330.

Southern Poverty Law Center. (2013). [Close to Slavery: Guestworker Programs in the United States](#). 2013 Edition.

State of California Department of Industrial Relations. (2023). [Heat Illness Prevention: What is Heat Illness](#).

Torres, J.M., Deardorff, J., Gunier, R.B., Harley, K.G., Alkon, A., Kogut, K., & Eskenazi, B. (2018). [Worry about deportation and cardiovascular disease risk factors among adult women: The center for the health assessment of mothers and children of Salinas study](#). *Annals of Behavioral Medicine*, 52(2), 186-193.

Tulimiero, M., Garcia, M., Rodriguez, M., & Cheney, A.M. (2021). [Overcoming barriers to health care access in rural Latino communities: an innovative model in the eastern Coachella Valley](#). *The Journal of Rural Health*, 37(3), 635-644.

US Bureau of Labor Statistics. (2023a, April 25). [Occupational Employment and Wage Statistics: 45-2092 Farmworkers and Laborers, Crop, Nursery, and Greenhouse](#).

US Bureau of Labor Statistics. (2023b, April 25). [Occupational Employment and Wage Statistics: 45-2093 Farmworkers, Farm, Ranch, and Aquacultural Animals](#).

US Department of Agriculture. (2023). [Farm sector financial indicators, State rankings](#).

US Department of Agriculture, Economic Research Service. (2023). [Food Security in the U.S.;](#)

US Department of Agriculture, National Agricultural Statistics Service. (2017). [Census of Agriculture, 2017 Ranking of Market Value of Ag Products Sold: Washington](#).

US Department of Justice. (2008). [Immokalee, Florida, Family Charged with Forcing Immigrants into Farm Labor](#).

US Department of Labor, Employment and Training Administration. (2022). [Findings from the National Agricultural Workers Survey \(NAWS\) 2019-2020: A demographic and employment profile of United States farmworkers. Research Report No. 16](#).

US Department of Labor, Wage and Hour Division. (n.d.). [H-2A Temporary Agricultural Program](#).

US Equal Employment Opportunity Commission. (n.d.). [Facts About Retaliation](#).

Valdez, C.R., Padilla, B., & Valentine, J.L. (2013). [Consequences of Arizona's immigration policy on social capital among Mexican mothers with unauthorized immigration status](#). *Hispanic Journal of Behavioral Sciences*, 35(3), 303-322.

Vallejos, Q.M., Quandt, S.A., Grzywacz, J.G., Isom, S., Chen, H., Galván, L., . . . Arcury, T.A. (2011). [Migrant farmworkers' housing conditions across an agricultural season in North Carolina](#). *American Journal of Industrial Medicine*, 54(7), 533-544.

Wainer, A. (2011). [Farm workers and immigration policy](#). Briefing Paper No. 12. Bread for the World Institute.

Washington State Employment Security Department (2023). [Washington's average wage increased to \\$84,167 in 2022](#).

Washington State Employment Security Department, Data Architecture, Transformation, and Analytics (2023). [Agricultural Employment and Wages](#)

Weigel, M.M., Armijos, R.X., Hall, Y.P., Ramirez, Y., & Orozco, R. (2007). [The household food insecurity and health outcomes of US-Mexico border migrant and seasonal farmworkers](#). *Journal of Immigrant and Minority Health*, 9, 157-169.

Williams, D.R., Neighbors, H.W., & Jackson, J.S. (2003). [Racial/Ethnic Discrimination and Health: Findings from Community Studies](#). *American Journal of Public Health*, 93, 200-208.

Yao, J., Eyamie, J., & Henderson, S.B. (2016). Evaluation of a spatially resolved forest fire smoke model for population-based epidemiologic exposure assessment. *Journal of Exposure Science & Environmental Epidemiology*, 26, 233-240.

Acknowledgments

We would like to thank the members of the organizations that we spoke with during the course of writing this report to introduce us to relevant content. These organizations include CAFÉ, Familias Unidas por la Justicia, the Strengthening Sanctuaries Alliance, Moses Lake Community Health Center, Hispanic Roundtable, Central Washington Justice for Our Neighbors, CIELO, La Casa Hogar, RAIZ, the Washington State Labor Council, the Northwest Justice Project, Skagit Legal Aid, the Fair Work Center, the Washington Immigrant Solidarity Network, and the Latino Community Fund.

We also thank the Washington State government employees who provided insight into their work with farmworkers, including representatives from the Department of Labor and Industries, the Employment Security Department, the Washington State Department of Agriculture, the Department of Health, the Commission on Hispanic Affairs, the Attorney General's Office, the Department of Social and Health Services, and the Department of Children, Youth, and Families. Thanks also to the Pacific Northwest Agricultural Safety and Health Center at the University of Washington for insights into conducting agricultural surveys.

For further information, contact:

Cory Briar at 360.664.9801, cory.briar@wsipp.wa.gov

Document No. 23-12-4101



Washington State Institute for Public Policy

The Washington State Legislature created the Washington State Institute for Public Policy in 1983. A Board of Directors—representing the legislature, the governor, and public universities—governs WSIPP and guides the development of all activities. WSIPP's mission is to carry out practical research, at legislative direction, on issues of importance to Washington State.