



## Climate Resiliency Among Agricultural Workers

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The changes in climate and weather patterns have a disproportionate impact on Migratory and Seasonal Agricultural Workers (MSAWs) because of the nature of their work, including increased exposure to heat and other severe weather events like wildfires, drought, and flooding, and loss of income due to crop failures and missing work due to natural disasters. This fact sheet addresses the need for health centers to have access to current, relevant research on how changes in climate impact their MSAW patients.

### Background Information

The Center for Climate and Energy Solutions defines climate resiliency as the ability to prepare for, recover from, and adapt to extreme weather impacts.<sup>1</sup> In order to better plan for and respond to changes in climate and weather patterns, an understanding of how this impacts vulnerable populations, including agricultural workers, is needed. A multi-national survey of over four thousand health professionals reported a consensus that 1) changes in climate exist, 2) are caused by human activity, and 3) are increasing in harming health globally.<sup>2</sup>

### Effects of Changes in Climate on Agricultural Workers

This section will present data about different impacts of the changing climate on agricultural workers such as heat-related illnesses and injuries, wildfires, infectious disease, and natural disasters.<sup>1</sup>

#### Heat-related Illnesses and Injuries

- Research shows that agricultural workers are 35 times more likely to die from a heat-related illness than occupations in other industries.<sup>7</sup> In a report from the U.S. Occupational Safety and Health Administration, they stated at least 22 agricultural workers had died from heat-related illness during the past five years.<sup>8</sup> Some outdoor workers hospitalized with heat-related illnesses have been found to also experience severe kidney damage.<sup>9</sup>
- Agricultural workers are disproportionately affected by heat-related illnesses, due to the intense physical nature of the work and long hours outdoors. The number of days U.S. agricultural workers spend in unsafe working conditions due to exceeding heat safety standards is estimated to double with a two-degree global mean temperature increase and triple with a four-degree temperature increase.<sup>10</sup>
- A study found a significant correlation between working in temperatures above 90 degrees Fahrenheit and an increase in work-related injuries.<sup>11</sup>

#### Wildfires

- Wildfire seasons are changing, becoming more intense due to extreme heat and new droughts. Agricultural workers are working while being exposed to the wildfire smoke, sometimes with wildfires close enough to see.<sup>13</sup> The American Lung Association says that exposure to the particulate matter pollutant in the air at that point is linked to heart attacks, lung cancer, and sometimes premature death.<sup>13</sup> Being exposed to wildfire smoke can also exacerbate underlying respiratory diseases such as

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<sup>1</sup> Natural disasters could include wildfires, flooding, droughts, hurricanes, extreme heat waves, and others.

asthma.<sup>13</sup> Agricultural workers are faced with the decision regularly of risking their health or losing income.<sup>13</sup>

- One of the reasons why agricultural workers are disproportionately affected by wildfires is because sometimes emergency notification systems do not reach rural areas or are not in a language agricultural workers can understand. Some may not have cell phone reception on the farms or in their housing at all.
- Even when evacuations are ordered due to wildfires, agricultural workers may have to remain in the area for work. Sonoma County, for example, grants agricultural workers exemptions from mandatory evacuations, in order to protect crops, which puts them disproportionately at risk.<sup>11</sup>
- Farmworkers interviewed in California in 2019 did not mention any protective equipment given to them by their employers during their experience of poor air quality due to wildfire smoke.<sup>14</sup> Employers acknowledged smoke as a hazard and their protective action is to take farmworkers off the field if the air quality is poor. Employers did not mention supplying protective masks.<sup>14</sup>

## Flooding

- In 2023, Monterey County, California officials estimated devastation of flooding having impacted 25,000 to 35,000 acres of farmland.<sup>15</sup> The United Farm Workers of America estimated that tens of thousands of agricultural workers lost wages due to the flooding in Monterey County in 2023.<sup>16</sup>
- The MSAW population is considered a vulnerable population, and flooding and other natural disasters impact their lives disproportionately.<sup>17</sup> A news article from California mentions an account of an agricultural worker being admitted to the hospital due to anxiety after losing his residence and belongings from flooding.<sup>15</sup>
- Flooding can also exacerbate illnesses due to poor housing conditions, by increasing the amount of mold present, which may increase the risk of asthma, a condition that is already common among agricultural workers.<sup>16</sup>
- A study conducted in eastern North Carolina shares that flooding damages the extensive crops and farmland there and these floods spread farm waste outward to other areas.<sup>18</sup> Some industrial hog processing plants store waste in lagoons which become a wasteland of bacteria, pharmaceuticals, and other dangerous substances which wash into nearby neighborhoods, affecting the public health of agricultural worker communities.

## Drought and Other Natural Disasters<sup>2</sup>

- Droughts can lead to food insecurity among vulnerable populations.<sup>12</sup> Changes in climate impact agriculture with factors like biodiversity loss including loss of pollinators, depletion of fisheries, soil degradation and freshwater depletion. These affect yields, pests, and food prices for everyone.<sup>19</sup> These disproportionately affect agricultural workers because they will have more exposure to pesticides which increases risks of many illnesses and also increase risk of food insecurity. Read more about food insecurity among agricultural workers [here](#).
- Natural disasters due to changes in climate may lead to undernutrition and an increase of stress mentally and physically.<sup>20</sup>
- Extreme weather events can lead to displacement.<sup>12</sup>
- A mixed methods study assessed disaster preparedness in North Carolina through quantitative surveys and qualitative focus groups with MSAWs and their families.<sup>17</sup> Respondents noted hurricanes were a top concern. Many participants were not fully prepared for hurricanes, as they reported not having an

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<sup>2</sup>Natural disasters mentioned in this section are any flooding, droughts, hurricanes, or other natural disaster that were not specifically distinguished in the reference.

emergency kit, evacuation plan, or other preparedness tools.<sup>17</sup> The two main barriers to natural disaster preparedness and knowledge mentioned by 100% of the participants was the lack of information about natural disasters in Spanish, and not knowing the location of the natural disaster. There were English emergency broadcasts mentioned, but they expressed needing the information in Spanish and Indigenous Mesoamerican languages.<sup>17</sup>

### Infectious Diseases

- High ambient temperatures can increase or reduce survival rate of different vector-borne diseases.<sup>21</sup> Changes in climate have already increased the risk of all known infectious diseases globally.<sup>12</sup> Bites from flea, mosquito, and ticks, all common vectors of pathogens, reported to the Centers for Disease Control and Prevention (CDC) have doubled between 2004 and 2018.<sup>22</sup>
- Factors of food insecurity, underlying chronic diseases, and extreme weather events that could lead to displacement and stress all increase risk of infectious disease among populations.<sup>12</sup> Agricultural workers already have higher rates of chronic diseases such as diabetes than the average U.S. citizen, which can exacerbate and increase the severity of many infectious diseases.<sup>23</sup>

### Recommendations

The following recommendations were found from peer-reviewed articles to mitigate and/or prepare for the effects of climate change on agricultural workers.

- Formal monitoring systems for natural disasters and emergency preparedness worksite trainings in farmworkers' preferred languages are recommended.<sup>24</sup>
- Agricultural workers have asked for more heat protection, such as heat protectant clothing or equipment and paid rest periods, and trainings from their employers as well as a removal of exemptions from mandatory evacuations during weather emergencies.<sup>11</sup>
- To protect MSAWs from heat-related illnesses, it is recommended for them to have rest breaks in the shade, access to medical attention, and access to potable water.<sup>25</sup> Similarly, the Occupational Safety and Health Administration (OSHA) recommends water, rest and shade to protect workers from heat-related illnesses.<sup>26</sup> The National Institute for Occupational Safety & Health (NIOSH) recommends workers wear breathable, light colored, loose-fitting clothing when working.<sup>27</sup>

### Conclusion

MSAW communities' ability to prepare for, recover from, and adapt to changes in change is different than the larger public. They are impacted disproportionately, especially increasing public health issues already existing in these communities.

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