

## Climate Change and the U.S. Food System

Agriculture accounts for approximately 11% of United States (U.S.) greenhouse gas emissions. These emissions come predominantly from crop and livestock production and on-farm energy use.<sup>1</sup> Reducing these emissions can be accomplished by transitioning away from the use of fossil fuels and synthetic fertilizers, using regenerative agriculture practices, reducing the production and consumption of animals, and reducing food waste, each of which can have added health co-benefits.<sup>83-86</sup>

Climate change and climate-related extreme weather events, in turn, are impacting agricultural systems at national, regional and local levels in the U.S. Flooding, droughts, and high temperatures can reduce food production, safety, and access to food.<sup>87</sup> These extreme events also disrupt the food system, decreasing supply and increasing prices, thereby increasing household food insecurity.

Agricultural workers, in particular, face health risks in a changing climate. There are one million U.S. agricultural workers, who are especially susceptible to extreme heat, experiencing heat mortality rates up to 35 times higher than workers from other industries.<sup>88,89</sup>

Among the most common health effects for agricultural workers are acute heat-related illnesses and life-threatening

heat strokes.<sup>90</sup> Chronic kidney diseases are a growing concern in agricultural communities in Central America<sup>91</sup> and may additionally affect agricultural workers in the U.S.<sup>92</sup> Heat exposure also exacerbates respiratory, cardiac, renal, and other chronic diseases.<sup>93</sup> Climate change is altering pest populations and resistance, increasing the perceived need for pesticide utilization,<sup>94-96</sup> and may increase farmworker exposure to toxic chemicals. Migrant workers, who make up approximately 75 percent of all agricultural workers in the U.S.,<sup>97</sup> have fewer occupational protections and are therefore at greater risk of suffering health harms.<sup>98,99</sup> Outdoor workers are particularly vulnerable to co-occurring climate hazards. For example, in 2020, outdoor workers in California were exposed simultaneously to extreme heat and wildfire smoke.<sup>100</sup>

Climate risks, such as extreme heat and wildfire smoke, result in lost workdays and lost productivity. This can harm both economic and food security of agricultural workers and communities.<sup>98,101</sup> Overall, it is anticipated that these detrimental health effects on agricultural workers could also significantly reduce agricultural productivity within the U.S., separate from the direct impacts of climate change on crop systems.<sup>102</sup> Lastly, climate impacts on the U.S. food system can have far-reaching impacts on food systems, including food prices and supply, with rippling impacts on global food insecurity.