Broadening understandings of drought – The climate vulnerability of farmworkers and rural communities in California (USA)

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ABSTRACT

The vulnerability of food and agricultural systems to climate variability and change is extensively studied. However, the vulnerability of agricultural labor is largely ignored in climate vulnerability and adaptation studies, especially in the context of developed countries. This research examines the drought vulnerability of farmworkers both in the fields and in their communities by analyzing how changes in water resources and agricultural practices impact socioeconomic drought. A combination of surveys and semi-structured interviews with farmworkers, farmers, and social service providers in California’s San Joaquin Valley is used to identify the impacts of drought on agricultural labor, water security, food security, and health. Findings demonstrate that drought impacts and vulnerabilities are multi-scalar and uneven. Agricultural drought adaptations, including increase in groundwater pumping and changes in crops, reshapes the vulnerability of farmworkers and rural communities. There is a need for continued interdisciplinary research on the socioeconomic dimensions of drought as well as increased representation of needs and vulnerabilities of farmworkers and rural communities in drought and climate change adaptation planning.

1. Introduction

The climate vulnerability of food and agricultural systems is extensively studied, with much of the literature focusing on the impacts of climate on agricultural production, farmer decision-making, and subsistence agriculture in developing countries. However, agricultural and food systems are more complex, with a broad set of actors beyond farm owners. These include farmworkers, food processors and retailers, consumers, and institutions that govern natural capital and social welfare (see Ericksen, 2008 for description of the drivers and feedbacks in this system). Each actor can be vulnerable to climate impacts and individual climate adaptations has the potential for cross-scalar impacts across the system. However, the vulnerability of farmworkers and rural communities remains largely neglected in climate vulnerability studies (Turhan et al., 2015). Though waged farmworkers make up over 40% of the world’s agricultural workforce, they are not usually included in vulnerability assessments, adaptation plans, or global poverty alleviation programs (Hurst et al., 2007).

The case of the 2012–2016 California drought is an opportunity to identify socioeconomic impacts of extreme drought on farmworkers and rural communities, including agricultural employment and indicators of well-being such as food and water security. Agriculture and water access vary between the east and west side of the SJV, which lead to a varied landscape of drought vulnerability. Considering these differences, this research identifies the socioeconomic processes and feedbacks in the agricultural system that shape differential drought vulnerabilities of farmworkers and rural communities.

This paper is organized as follows. Section 2 connects the literature on socioeconomic drought in agricultural systems in developed countries with the scholarship on climate vulnerability. Section 3 describes the study area and the case study of the 2012–2016 drought. Section 4 summarizes the methods for data collection, including semi-structured interviews and a household survey. In Section 5, data results on the impact of the drought on agricultural employment and well-being are presented. Section 6 discusses these results in the context of socioeconomic drought and differential vulnerability. Finally, Section 7 concludes the paper with policy recommendations.