

SOCIAL AND AGRICULTURAL VULNERABILITY TO CLIMATE CHANGE HAZARDS IN THE SOUTHERN REGION

Megan Donovan¹ and Kevin Ash²

¹School of Natural Resources and Environment, University of Florida, Gainesville, FL, USA

²Geography Department, University of Florida, Gainesville, FL, USA

Food systems face distinct vulnerabilities to the hazards intensified by climate change due to a rapidly evolving economic, environmental and social environment. Considerable literature explores social vulnerability using various indices (e.g., HVRI SoVI, CDC SVI) to hazards in an array of both hazard and geographic contexts. Similarly, index construction is prevalent in the literature on agricultural sustainability. The present study seeks to approach solutions for food systems in the face of climate change by assessing hazards of both the social and agricultural dimensions of vulnerability. The geographic area of interest is the USDA defined Southern Region: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, Puerto Rico, South Carolina, Tennessee, Texas, Virginia and the U.S. Virgin Islands. I used SHELDUS data of hazard frequencies and crop damages of drought, flood, hurricanes and tornadoes due to their climate sensitive nature and their significance for the study area. Additionally, I incorporate SoVI scores and percentiles and irrigated acreage data from the 2017 Census of Agriculture to represent the social and agricultural dimensions of vulnerability, respectively. Clear spatial trends in how hazard vulnerability functions emerged when examining social and agricultural systems as inherently coupled systems. A robust understanding of both social and agricultural vulnerability to climate sensitive hazards can inform policies and recommendations to help foster sustainable and resilient food systems.

PRESENTER BIO: Megan Donovan is a PhD candidate in the School of Natural Resources and Environment at the University of Florida. She has extensive experience in the nonprofit sector, particularly in affordable housing and community development. She currently works on a research project investigating decision-making of farmers operating organic high tunnel systems.