

# Climate Change Beliefs, Concerns and Support for Adaptation and Mitigation among Corn Belt Farmers

**Dr. J. Gordon Arbuckle Jr.<sup>1</sup>, Iowa State University**

Agriculture is both vulnerable to global climate change and a significant source of the greenhouse gases (GHGs) that are driving climate shifts. Because climate change-related threats to agriculture also represent threats to society, calls for adaptation and mitigation are increasingly common. Natural hazards research finds that adaptation and mitigation behavior depends in large part on perceptions of the risks associated with a given natural hazard, and perceived risk is mediated by beliefs about the existence of the hazard and its characteristics. However, although beliefs form the cognitive basis for behavior, they may not be accurate or scientifically based. Public understanding and risk perceptions regarding climate change are particularly unsettled, with beliefs about the phenomenon varying widely among different population segments.

This presentation presents preliminary data on climate change beliefs, perceived risks, and support for adaptation and mitigation from a survey of 4,778 corn farmers with a minimum of 80 acres of corn and \$100,000 of gross farm income from 22 HUC 6 watersheds spanning 11 Corn Belt states (Figure 1). Results show that 66 percent of the farmers in the sample believe climate change is occurring. Eight percent believe climate change is occurring and caused mostly by human activities, 33 percent believe climate change is due equally to human and natural causes, and 25 percent attribute it mostly to natural causes. Thirty-one percent believe there is not enough evidence to determine whether climate change is occurring, and four percent do not believe it is happening. Comparisons by climate change belief structure indicate that farmers who believe climate change is occurring and attributable at least in part to humans tended to express higher levels of concern about climate-related risks to agriculture, such as more frequent drought, more frequent extreme precipitation, and increased pest and disease pressure. Likewise, farmers who believe climate change is happening and due to human activity expressed higher levels of support for societal, organizational, and individual adaptation and mitigation actions (Figure 2).

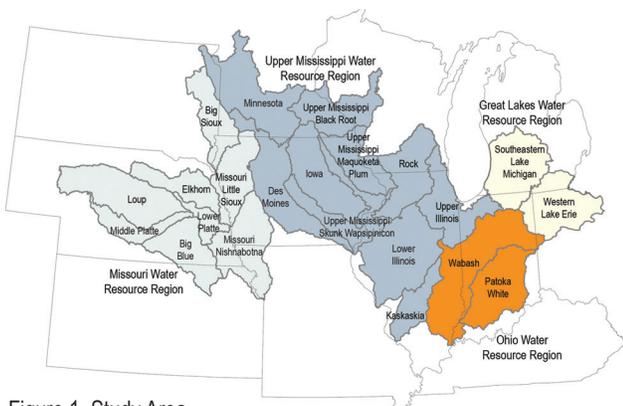


Figure 1. Study Area

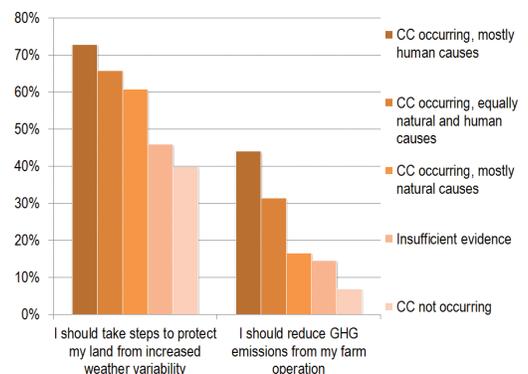


Figure 2. Belief and Support for Adaptation and Mitigation

<sup>1</sup>The Climate and Corn-based Cropping Systems Coordinated Agricultural Project (CSCAP) farmer survey was a collaborative effort between social scientists from CSCAP and the USDA NIFA-funded Useful-to-Useable (U2U) project. CSCAP Co-PIs included John Tyndall, Tricia Knoot, and Lois Wright Morton. U2U collaborators included Linda Prokopy (Purdue University) and Tonya Haigh and Cody Knutson (University of Nebraska).

**For more information, contact:**

Dr. J. Gordon Arbuckle, Jr., Assistant Professor, Iowa State University, arbuckle@iastate.edu, 515-294-1497  
 Lynn Laws, Communication Specialist, Climate and Corn-based Cropping Systems CAP, lynnlaws@iastate.edu, 515-294-7380  
 Project web site and e-mail: sustainablecorn.org | info@sustainablecorn.org

This presentation was given at the Climate and Corn-based Cropping Systems Coordinated Agricultural Project (CSCAP) 2012 Annual Meeting. This handout and supplemental video are approved for use in research, education, and extension outlets.

