Farmers' Risk Management Practices and Climate Information Habits in the Southeast U.S.

C. Roncoli[1], T. A. Crane[1], J. O. Paz[1], N. E. Breuer[2], K. Broad[2], and G. Hoogenboom[1]
[1]Department of Biological and Agricultural Engineering, University of Georgia, Griffin, GA
[2]Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, FL,

El Niño-Southern Oscillation (ENSO) is a key determinant of inter-annual climate variation in the southeastern U.S. ENSO phases affects precipitation and temperatures in the fall, winter, and spring months and the frequency of hurricane landfalls and spin-off storms. The economic impacts of climatic variation can be mitigated through the incorporation of predictive information systems into management decisions. However, to be relevant and effective these predictive information systems must be integrated with farmers' systems of knowledge and practice

This poster reports on research conducted for the Southeast Climate Consortium (SECC), a multidisciplinary project dedicated to developing climate-based tools for decision makers in agriculture and natural resource management in the southeastern U.S. The goal of this research is to understand how farmers' risk-management strategies can be enhanced by the SECC tools and information. During winter and early spring of 2007, interviews were conducted with 38 farmers across 20 counties in South Georgia. Participants operated multi-generational family farms and were full-time farmers. Production systems included row crops, fruits and vegetables as well as pines, pecans, sows, and cattle operations. The scales of farm operations varied from 800 acres to over 5000 acres, including owned and rented land and irrigated and un-irrigated fields.

Findings indicate that farmers actively seek and use weather forecasts in management decisions, but are less familiar with climate forecasts. A few farmers who have encountered climate forecasts though farm-oriented and mainstream media or through DTN systems have used them mainly as "background information" or for "peace of mind" rather than as decision support tools. This role is nonetheless notable, since farmers tend to triangulate among multiple information sources rather than rely on a single source. The farmers interviewed identified a range of potential applications for the information and tools produced by the SECC. They included crop selection, timing of planting, varietal selection, land management and marketing strategies. The research documented actual use of the SECC decision support system, for example in the selection of peanut varieties. However, farmers also stressed that management decisions are conditioned by rotation requirements, input prices, credit options, insurance constraints, price supports, trade and agricultural policies, and labor and immigration regulations. The indebtedness and inflexibility of highly capitalized operations, infrastructural investments, and large acreages also constrain farmers' climate adaptations. Some farmers voiced concerned that climate forecasts may be used by other stakeholders (e.g. insurers, lenders, brokers) to gain leverage over farmers.

The study also highlighted important communication issues. Farmers suggested that effective decision support systems should have an identifiable identity, communicate in lay users' language, cultivate habitual use, and enable users to assess for themselves whether they can based their decisions on such information, by publishing the forecast track record. Tools should be intuitive and user-friendly, considering that farmers have limited time and mental energy for processing additional information. These suggestions are currently being integrated into the SECC decision support system, in line with the program's strong emphasis on stakeholder-driven product development and assessment.

Contact information: Carla Roncoli, Department of Biological and Agricultural Engineering, University of Georgia, Griffin, Georgia 30223-1797, USA; Phone 404-524-8833;
Email: croncoli@uga.edu