Science for Societal Responses to a Changing and Uncertain Climate
A Work In Progress

James W. Jones
Agricultural & Biological Engineering Department
University of Florida
Outline

• Why an Institute?
• An evolutionary process
  – The Southeast Climate Consortium
  – BOG Center of Excellence Proposal
• FCI Mission
• Envisioned FCI niche
• Current Status & Plans
Why an Institute?

• The major challenge of climate change, climate variability, and sea level rise rise to society
• Major progress on understanding the global climate and its changes, but less on changes at local to regional scales
• Lack of understanding of how society should respond to climate change information at local to regional scales and at multiple time scales over which decisions, policies are made
• Many questions without answers in Florida on climate change, sea level rise, and associated decisions and policies
• Success of the SECC during the last 10 years
• Increase awareness of and cooperation among disparate climate projects in and among our universities
An Evolutionary Process

- The Southeast Climate Consortium
- A joint proposal to the Florida Board of Governors for a “Center of Excellence for Climate Technologies and Preparedness”
- Florida Climate Institute initiative
• 1998 – the Florida Climate Institute
  – Climate science – FSU
  – Agricultural responses – UF
  – Social, economic issues – UM

• 2003 – Broadened to SECC
  – U Georgia
  – U Alabama-Huntsville
  – Auburn U
  – North Carolina State U
SECC

- Seasonal climate variability and forecast information use
- Emphasis on agriculture, water resources management
- Research – climate risk management, decision analysis framework, assessment of stakeholders and SECC products
- Interdisciplinary, about 60+ scientists
- Extension – integral part of program via climate extension specialists
Integrating Climate, Agricultural, Hydrology, Economic Models

Many Projects Ongoing:
Some cutting edge; others address immediate needs

CARBON FOOTPRINT BASELINE FOR COW CALF PRODUCTION SYSTEMS: BUCK ISLAND RANCH

Marta M. Kohmann, Clyde W. Fraisse

MacArthur Agro-ecology Research Center
a division of Archbold Expeditions
AgroClimate is a service of the Southeast Climate Consortium. AgroClimate provides important new tools to help agricultural producers.

Operational since August 2008

Hosted by Florida Cooperative Extension at UF

Open-Source AgroClimate Project, multiple states, countries

http://AgroClimate.org
What We Learned: Strong Interest in:

- Developing market advantage re: carbon footprint
- Biofuel production
- Climate forecasts or projections from weeks to decades
- Technologies for reducing risks to climate variability and to climate change
- Carbon sequestration in forestry, agriculture
- Land use, management for environmental services, payments
- Sea level rise
- Recreation impacts and adaptation
- Drought, hurricane frequency
- Water policy
- Water withdrawal, allocation
Florida Climate Institute
Mission

To create economic opportunities and environmental benefits to society at local to regional scales (in Florida and beyond) by providing reliable scientific information about climate change and sea level rise and by developing technologies and policy options for societal responses to those changes.
Goals

The FCI will foster interdisciplinary research, education, and extension to:

• Improve understanding of the processes and effects of climate variability, climate change, and sea level rise on the economy and on natural and human-built systems

• Develop technologies and information for reducing economic and environmental risks in managed and natural systems and to support environmental policies

• Engage Floridians in research, extension and education programs for enhancing adaptive capacity and responses to associated climatic risks
Objectives

• Develop & make widely available climate change and climate variability scenarios & datasets
• Develop innovative approaches & tools for incorporating climate change & sea level rise into policy and decision making processes for land, water, and natural resources
• Provide information for use by different sectors to assess benefits and tradeoffs among different decision and policy response options
• Develop methods that use climate change information to build resiliency and adaptive capacity at local to regional scales that are globally applicable
Envisioned FCI Niche

• Local to regional scales (in Florida and beyond)
• Temporal scales of weeks to seasons, years, decades, and beyond, based on societal needs
• Globally applicable methods and tools
• Emphasis on societal “responses” to climate variability/change, sea level rise (adaptation, mitigation, and others)
• Partnerships among with boundary organizations, private sector, and public agencies
• Interdisciplinary – biological, physical, social scientists
• Technologies and decision support system that bring about economic opportunities, sustainable development
Why Focus on Responses?

- Reliable climate information, honest broker
- Impacts on biological, agricultural, ecological, hydrological, built systems
- Adaptation by farmers, water, land, and natural system managers, city/county/state agencies, businesses, etc.
- Mitigation options and opportunities
- Policy options
Current Status

• Seed funding provided by UF and FSU administration
• Paperwork being finalized for official designation as a joint institute in the SUS
• Plans underway to submit various proposals for federal funding and to co-locate UF component with the Water Institute
• Future requests for expanding the institute via state funding, when available
Next Steps & Discussion