

# Applications of Climate Information to Agriculture in the Southeast USA -- A Perspective from Agricultural Extension Services

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## The Land Grant University System

The Land Grant University System (LGUS) has a tripartite mission – teaching, research, and extension. Through Federal legislation, Agricultural Experiment Stations were established in 1887 and the Cooperative Extension Service was established in 1914 specifically to disseminate information produced by researchers at the experiment stations. Thus, the LGUS has a long history of linking research with the ultimate end-users through the extension system.

Since the inception of the land grant university system in the late 1800s, the three mission areas have grown even more integrated. Today, many faculty members have joint responsibilities in two or three of the mission areas, which strengthens the relationships among the mission areas.

Figure 1. Tripartite mission of the land grant university system: research, teaching, and extension.



## IFAS Extension Services

Extension educational programs are provided by both state extension specialist faculty, which are located on the main campus or at 13 research and education centers, and county extension faculty located in each of the 67 counties.

Some of the extension educational program areas are:

- 4-H and Youth Development
- Agribusiness and Community Development
- Agricultural Safety
- Crop Production (including Home Garden Crops)
- Disaster Preparedness and Recovery
- Education and Communication Processes
- Family and Consumer Issues
- Food and Food Science
- Insects, Plant Diseases, Pesticides, and Weeds
- Lawns and Landscapes (including Ornamental Plants)
- Livestock, Pets, Fish and Wildlife
- Natural Resources and Environmental Topics



Figure 2. Location of IFAS Research and Education Centers, which complement county extension offices.

## AgClimate Decision Support System

The Southeast Climate Consortium, a multidisciplinary, multi-institutional research and extension team, has developed this web-based system for disseminating information about climate and climate effects on crops, forests, and other agricultural products.

AgClimate developers have entered into a partnership with FAWN, the Florida Agricultural Weather Network, which is a real-time weather delivery program of Extension.



## Climate Services Operation

With its broad network for outreach to agricultural clientele and the potential synergy with FAWN, Extension is the logical home for operations of climate information services for agriculture.

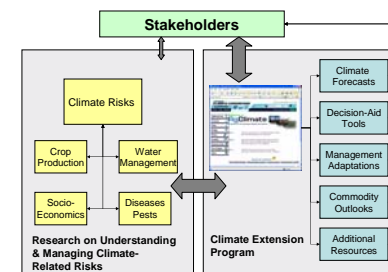


Figure 4. Extension faculty and climate researchers are working together to establish a range of decision support tools for agriculture that use climate forecasts and other climate information to mitigate risks.

## Importance of Climate Information for Agriculture

Climate variability strongly affects agricultural productivity. The Florida Department of Agriculture has estimated that we lose an average of \$500 million annually to climate related damages that could have been mitigated if producers had timely and appropriate information regarding these climate risks and alternative responses to these risks.

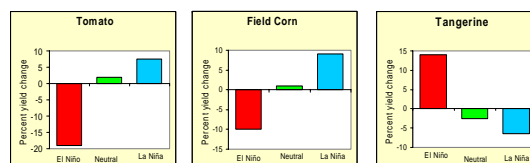


Figure 3. ENSO phases can have either positive or negative effects on production of winter crops in Florida. Winter crops generally yield less during El Niño climate conditions because of relatively cooler temperatures and less solar radiation.

## An Ongoing Relationship

A decision support system will require continuing efforts to ensure that information is up to date and to develop products to meet newly identified needs.

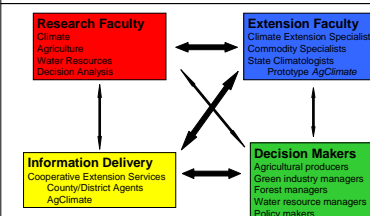


Figure 4. Relationships among the various components needed to develop, disseminate, and apply climate information to agriculture. Arrow thickness is relative to the proportion of interaction between elements.