V(A). Planned Program (Summary)

Program # 15

1. Name of the Planned Program

Climate Change

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	15%	0%		
111	Conservation and Efficient Use of Water	5%	0%		
132	Weather and Climate	50%	0%		
205	Plant Management Systems	25%	0%		
605	Natural Resource and Environmental Economics	5%	0%		
	Total	100%	0%		

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Actual	0.8	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
12710	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
19648	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
78049	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Basic information about climate variability was disseminated not only in Alabama but also throughout the Southeast US. The information shared was mainly related to the patterns of climate variability in the Southeast, the impact of ENSO on the climate in the Southeast, the sources of information available to stakeholders for assessing differences between ENSO phases respect to rainfall and temperature, climate forecast for the Southeast, the relationship between ENSO and wheat production, and the relation between climate variability and plant diseases. Information was disseminated through fact sheets, popular press articles, web publications, extension activities - field days- seminars-workshops, professional meetings, row crops production meetings.

2. Brief description of the target audience

The target audience was:

1) Row crop producers, 2) Row crop and fruit-vegetable advisors including ACES agents and specialists, public and private crops advisors, 3) University professors and graduate students from seven universities in the Southeast US.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	{NO DATA	{NO DATA	{NO DATA	{NO DATA
Actual	300	1500	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010
Plan:
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Publications. Information was disseminated through fact sheets, popular press articles, and web publications. Below is the list of this extension documents./ Fact Sheets Sharda, V., B. V. Ortiz, P. Srivastava, P. 2010. Impact of El Niño Southern Oscillation on Precipitation in Alabama. ACES Timely Information Sheet ? August 2010. http://www.aces.edu/timelyinfo/BioSysEng/2010/August/august2010.pdf Visits: 29 _ Views: 50/ Popular press Ortiz, B. 2010. Climate information gaining importance. Southeast Farm Press magazine. April 5, 2010. http://southeastfarmpress.com/management/climate-information-gaining-importance (Southeast Farm Press magazine - Circulation: 50,000 in the Southeast)/ Langcuster, J., Ortiz, B. 2010. Prepare for La Niña this fall, winter. Southeast Farm Press magazine. October 13, 2010. http://southeastfarmpress.com/management/prepare-la-ni-fall-winter./ Langcuster, J., Ortiz, B. 2010. Climate Group Helps Farmers Manage Risks. AG illustrated magazine (AU magazine). April 2010./ Web Publications Langcuster, J., Ortiz, B. 2010. Using Climate Information to Farm Better. ACES Blog (Web article). February 17, 2010 https://sites.aces.edu/group/comm/sustainability/Lists/Posts/Post.aspx?ID=23 Views: 125 / Langcuster, J., Ortiz, B. 2010. Using Climate to Farm Better, Part II. ACES Blog (Web article). March 03, 2010 https://sites.aces.edu/group/comm/sustainability/Lists/Posts/Post.aspx?ID=27 Views: 42 / Langcuster, J., Ortiz, B. 2010. Climate Consortium Advising Farmers to Prepare for La Nina Effect This Fall and Winter. ACES Blog (Web article). October 5, 2010 https://sites.aces.edu/group/comm/sustainability/Lists/Posts/Post.aspx?ID=83 Views: 641 /

Year	Target	Actual
2010	{No Data Entered}	100

Output #2

Output Measure

- The Climate Change educational program generated 9 in-state presentations, 3 out-state presentations, 1 workshop

Year	Target	Actual
2010	{No Data Entered}	14

Output #3

Output Measure

- Posters and other forms of written presentation. Three posters discussing the impact of climate variability on row crop production and diseases, and how farmers learn about climate variability were prepared. The posters were presented at the annual review meeting of the Southeast Climate Consortium.

Year	Target	Actual
2010	{No Data Entered}	3

Output #4

Output Measure

- The extension program in climate variability and climate change reached over 300 growers/crop consultants through 9 grower and crop consultant meetings, 13 extension specialists participated of one workshop focused on the use of climate decision support tools, 3 posters, 7 extension articles, 1 professional meeting - A total of 1400 contacts - direct and indirect contacts.

Year	Target	Actual
2010	{No Data Entered}	1400

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	- Number of REAs (Regional Extension Agents), extension specialist, and crop advisors who incorporate weather and climate information and climate decision support tools into their own programming efforts. - Number and type of climate decision support tools used by stakeholders. - Documentation of direct positive impact on a producer or local production area as a result of REAs? interaction with stakeholders. This will include acreage and financial information as supporting evidence. - In addition, an attempt will be made to measure the number of Extension clientele who benefit from the trainings conducted as part of the climate change extension program. The benefit may come in the form of the adoption of information or in the assistance of its use.

Outcome #1

1. Outcome Measures

- Number of REAs (Regional Extension Agents), extension specialist, and crop advisors who incorporate weather and climate information and climate decision support tools into their own programming efforts. - Number and type of climate decision support tools used by stakeholders. - Documentation of direct positive impact on a producer or local production area as a result of REAs? interaction with stakeholders. This will include acreage and financial information as supporting evidence. - In addition, an attempt will be made to measure the number of Extension clientele who benefit from the trainings conducted as part of the climate change extension program. The benefit may come in the form of the adoption of information or in the assistance of its use.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

- Extension agents, extension specialists from the agronomic crops team and some producers understand the differences between ENSO phases and are aware of the impact ENSO has on climate variability./ Extension agents, extension specialists from the agronomic crops team and some producers have change the attitude about the use of climate information to support agronomic management./The increased request for climate information and ENSO forecast by extension agents and farmers indicates their interest in climate variability and impacts on agriculture.

What has been done

- Climate outlooks generated by NOAA and the Southeast Climate Consortium (SECC) are distributed to extension agents and extension specialists working on the areas of row crops production, animal science, and horticulture. The outlooks are distributed to farmers through email and blogs posted in the ACES web page./ A small row crop farmers group with participation of farmers from AL, GA and FL meets at least twice a year to discuss about climate forecasts, impact of climate variability on agriculture and potential adaptation strategies to reduce climate related risks. Farmers meetings, field days and workshops to disseminate climate information.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
132	Weather and Climate
205	Plant Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Public Policy changes
- Government Regulations

Brief Explanation

There are numerous external factors that could impact the planned outcomes of Climate Change extension program. The external factors include but not limited: failure of climate variability forecast and climate change predictions could affect education programs as well as suggested adaptation and mitigation strategies. Resilience of farmers to climate variability and climate change might also reduce the success and impacts of the program. Unpredictable weather conditions (hurricanes, tropical storms, droughts, etc.) impacting the results from research studies necessary to identify adaptation and mitigation strategies to climate variability and climate change. Other external factors include but not limited: natural environmental disasters, commodity prices, farm bill regulations, the economic environment across the world, technology introduction and adoption rates, associated costs of production, and many others that are unforeseen.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

Evaluation Results

Although a formal evaluation of the program has not been conducted (only one yrar program), the PI of this program has documented the increased interest by extension agents, extension especialist and farmers about climate variability and the impact of ENSO on agriculture. The number of calls and emails asking for the season climate forecast has considerably increased in one year. Farmers and extension agents have been very interested about climate forecast row crops are planted in Alabama.

Key Items of Evaluation