V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Climate Change

☑ Reporting on this Program

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	20%	0%		
132	Weather and Climate	60%	0%		
205	Plant Management Systems	10%	0%		
211	Insects, Mites, and Other Arthropods Affecting Plants	5%	0%		
212	Pathogens and Nematodes Affecting Plants	5%	0%		
	Total	100%	0%		

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	2.0	0.0	0.0	0.0
Actual Paid Professional	0.4	0.0	0.0	0.0
Actual Volunteer	0.0	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
2757	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
8312	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
38156	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The main activities planned for this program were:

1. Increase stakeholders (farmers, county and faculty extension specialists, consultants) literacy on climate variability and change. This will be achieved through in-service training sessions, multi-state conferences, workshops, development of news letters and extension bulletins, and participation in outreach activities.

- Multi-state in-service training with title "Climate Adaptation Exchange" for farmers, extension agents, and extension specialists for the Tri-state (AL-GA-FL) region of the SE US. This event was conducted to feature seven examples of proposed agricultural management strategies that provide growers with alternative ways to manage climate-related risk 8 hours - 63 attendees.
- Multi-state in-service training with title "Sixth meeting of the Tri-state Row Crop Climate working group. Goal: Learn about 3 "best bet" technologies for climate adaptation in row crop production. 7 hours - 36 attendees.
- A workshop with title "Climate information and the use of Agroclimate tools" for the Alabama county extension coordinators. 4 hours workshop - 15 attendees.
- In-service training with title "Disaster preparedness training webinar" for extension coordinators and extension agents from ACES. 75 attendees.
- Climate Extension website (http://www.aces.edu/climate/)/.The website has received 2736 visits and 19,649 hits (75 hits per day) since development in April 1st, 2012.
- Climate educational video - "Crops Chronicles: Better Farming through Climate Management" http://www.youtube.com/watch?v=Dn5a60xDbPg(571 views since January 25, 2012)
- News letter with title "Ag. Outlook - Winter 2012" disseminated through the "Alabama Crops. Com website" has received 105 visits and 979 views since January 1st, 2012.
- Development of two Extension publications: ABC's of Climate variability" and "Planting date and variety selection effects on Wheat Yield".
- Development of Climate Extension website: www.aces.edu/climate
- Participation of a county meeting for forage producers. The impact of El Niño Southern Oscillation on the Alabama climate was discussed. 20 attendees.
- Participation during the Ag Discovery Adventure. Interactive activities for kids about weather and climate. ~ 750 attendees.
- Participation with a presentation during the Soil Water Conservation Society meeting - Alabama Chapter. 65 attendees.
- Article in mass media sources - **Ortiz, B**. 2012. Proper variety, planting date help insure top wheat yields. Southeast Farm Press magazine. October 9, 2012. http://southeastfarmpress.com/grains/proper-variety-planting-date-help-insure-top-wheat-yields(Southeast Farm Press magazine - Circulation: 50,000 in the Southeast)
- Stakeholders were reached out by email with climate information updates. The number of people contacted was 2,000.

2. Evaluate at state level, climate change projections developed for the Southeast which will improve skill of summer and fall forecasts.

- This is still a work in progress. Current climate change projections for the Southeast US have been evaluated by a group of scientists from the Florida State University and they found that models' resolution is too coarse to resolve regional and localscale processes such as variability influenced by El Niño

Southern oscillation or the North Atlantic Oscillation.

3. Identification of potential adaptation strategies to reduce the impact of climate change on agricultural systems. This is expected to be achieved through in-service training sessions combined with panel discussions with participation of farmers, agribusiness representatives, commodity associations, cooperatives, water management districts, and county and state governments.

- The meetings carried out to discuss potential adaptation strategies were:
- Multi-state in-service training with title "Climate Adaptation Exchange" for farmers, extension agents, and extension specialists. 8 hours - 63 attendees.
- Multi-state in-service training with title "Sixth meeting of the Tri-state Row Crop Climate working group. Goal: Learn about 3 "best bet" technologies for climate adaptation in row crop production. 7 hours - 36 attendees.
- A workshop with title "Climate information and the use of Agroclimate tools" for the Alabama county extension coordinators. 4 hours workshop - 15 attendees.
- Participation of a county meeting for forage producers. The impact of El Niño Southern Oscillation on the Alabama climate was discussed. 20 attendees.
- Evaluation of planting date and variety selection as potential strategies to minimize climate-related risks on wheat production was conducted. Results were disseminated through farmers meetings, preparation of one extension publication. In addition, two manuscripts were prepared for publication; one of them has been accepted for publication in Agronomy Journal.

4. Evaluation of changes in pest/diseases as consequence of climate change - Monitoring and management of row crops, fruits and vegetables pest education.

- Unfortunately, this activity within the plan was not conducted due to a limited amount of time. However, meetings with research and extension entomologists from the University of Georgia and Auburn University were conducted to identify the focus of this work and data available to conduct initial studies. It was identified that studies looking at the impact of climate variability on Hessian Fly (a pest for wheat), and aphids responsible to transmit the barley yellow dwarf on wheat will be possible and will have impact among the farmers in the region.

5. Evaluation of changes in water resources as consequence of climate change - Education on monitoring and management of water resources.

- Participation with a presentation during the Soil Water Conservation Society meeting - Alabama Chapter. Title of the presentation: "Uses of climate information and forecasts by crop and water managers". 65 attendees.

6. Evaluate the scenarios for agricultural trade at international/regional levels under different climate change scenarios to understand potential implications for agricultural and trade policy as a result of climate change.

- Due to time constrains, this objective was not achieved.

7. Development of Decision Support Systems.

- Data was generated through research studies to develop a tool assessing the yield risk associated with delayed planting of winter wheat under different ENSO phases in the Southeast USA. The tool will be developed during the first six months of 2013.

2. Brief description of the target audience

The activities of the Climate Change Program Priority Team reached the following groups of stakeholders: 1) row crop and fruit-vegetable producers and their representatives groups that include, but are not limited to, the Alabama Cotton Commission, Alabama Peanut Commission, Alabama Soybean Producers, and Alabama Wheat and Feed Grains Committee; 2) row crop, forage, fruit-vegetable advisors including ACES agents and specialists, ACES county coordinators, ACES risk preparedness specialists, public and private crops advisors; 3) governmental agency personnel including USDA, NRCS, and State of Alabama Soil andWater Conservation Committee; and 4) private citizens impacted by policies and practices used for the production of food, fuel, and fiber. All educational programming efforts targeted audiences without exclusion or discrimination, as specifically defined by ACES policy guidelines.

3. How was eXtension used?

No

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	400	5700	100	0

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

Patent Applications Submitted

Year: 2012

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	2	1	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- - Distribution of basic information about climate variability and climate change not only for Alabama but also for the Southeast. Most of the information will be related to differences between climate variability and change, maps of the average spatial variability of the most important climatic variables (e.g., rainfall and temperature), forecasts provided by US official weather service (NOAA). Several methods of notification (email-Timely Information Sheets, articles in popular press, climate variability/ climate change web site specifically designed for the program, etc) will be used to disseminate information. - Specific outputs include: 1) News and current information posted on the Climate web site as well as agronomic crops web site (www.alabamacrops.com).

Year	Actual
2012	20

Output #2

Output Measure

- - Meetings, in-service trainings, and workshops, will include information on the relationships between agriculture/natural resources and climate change as well as potential impacts, relationships between pest/diseases changes in relation to climate variability and climate change. - Specific outputs include: 1) Multi-state conferences on climate change and the implications for agriculture and natural resources, 2) In-service training meetings for target audiences (e.g., row crops producers, fruit and vegetable producers, soils and water conservationists, etc).

Year	Actual
2012	12

Output #3

Output Measure

- - Reports based on reviews of current knowledge about the relationships between agriculture and climate change and potential impacts.
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

- - Recommendations for adaptation strategies for row crops/fruit and vegetables will be development to reduce the risks of climate variability and climate change. - Specific outputs include: a) Guidelines for agronomic management under various climate variability and climate change scenarios and b) Hard copy publications for use in production meetings and trainings where deemed appropriated.

Year	Actual
2012	5

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Members of the ACES Climate Change team will be required to provide a success story on an annual basis describing the program activity which they felt best demonstrated the impacts of their work. These success stories contain the following elements: a) why the program was conducted or the situation/problem that was addressed; b) specifically what and how it was done; c) the time period involved; d) the specific locations involved; e) who was impacted; f) how many people were served; and g) the final impacts. Short-term outcome: The most immediate outcomes are: 1) Increased understanding of the potential impacts of climate variability and climate change on row crops, fruits and vegetables;
2	2) Increased information about the impact of ENSO phases on row crops, fruits and vegetables;
3	3) Alabama stakeholders trained/educated in climate variability and climate change topics;
4	4) Alabama growers, extension agents and extension specialists trained in using agroclimatic decision support tools
5	5) Capacities strengthened for integrating climate change risks and opportunities into state and regional development assistance
6	6)Capacities strengthened to access and use resources effectively to reduce risks associated with climate variability and climate change
7	7) Capacities strengthened to understand and manage water or natural resources in the context of climate vulnerability
8	8) Identification of the most profitable row crops management practices by ENSO phase
9	9) Identification of adaptation strategies to reduce climate change impacts.
10	10) increased awareness of the impacts of climate on agricultural Production.
11	Medium-term outcomes: The medium-term outcomes of the Climate Change Extension Program are: 1) implementation of a new system of management practices for row crops and vegetables according to ENSO phase
12	2) Improved agronomic management row crops and vegetables
13	Long-term outcomes: The long-term outcomes of the Climate Change Extension Program are: 1) increased profitability of Alabama growers
14	2) improved soil conditions
15	3) reduced environmental impacts

16	4) competitive Auburn and ACES Agronomic Research, Extension and Education system.

Outcome #1

1. Outcome Measures

Members of the ACES Climate Change team will be required to provide a success story on an annual basis describing the program activity which they felt best demonstrated the impacts of their work. These success stories contain the following elements: a) why the program was conducted or the situation/problem that was addressed; b) specifically what and how it was done; c) the time period involved; d) the specific locations involved; e) who was impacted; f) how many people were served; and g) the final impacts. Short-term outcome: The most immediate outcomes are: 1) Increased understanding of the potential impacts of climate variability and climate change on row crops, fruits and vegetables;

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Use of climate information to support agronomic management decisions.

What has been done
The farmer, Myron Jonhson from Headland, knew from the climate meetings that drought conditions were likely to happened and because of that, he decided to kill his cover crop earlier and plant the peanut crop earlier than normal.
- A second Farmer, Jesse Scott, from Geneva County in Alabama, expressed that ?based on the climate information he received during the winter row crops climate working group meeting?, he increased the acreage (increase 30-40 acres) planted in corn.

Results
-Changes in management decisions, early termination of cover crops and early planting of penuts, saved Mr. Myron Jhonson his peanut production and allowed him to have higher production than his neighbors.

- Because of the increase in corn acreage by Mr. Jesse Scott and good weather and climate

condictions, Mr. Scoot perceived an increase in corn yield and profitability. The yield in 2012 was 95 bu/acre (116 acres - 40 acres more than usual) compared with the 3 years average of 60-85 bu/acre.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

2) Increased information about the impact of ENSO phases on row crops, fruits and vegetables;

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
-ENSO (El Niño nd La Niña phase of ENSO) has an impact on the cliamte in the Southeast. Thefore, if rsearchers, extension personnel and farmers are aware of how the climate cahnge with ENSO and the possible consequences on crop production; then management strategies can be implemented to reduce climate-related risks.

What has been done
- The extension publication: ?Planting date and variety selection effects on Wheat Yield? was prepared and distributed among stakeholders to inform them on the importance of selecting correctly these two practices to reduce climate-related risks.

- Preparation of the Extension publication: ABC?s of Climate variability". This publication include information on the impact of ENSO on precipiation and Alabama as well as row crops production.

- Preparation of ONE article about the importance of planting date and variety selection on wheat

production and the impact of climate variability on wheat yield. Article name: ?Proper variety, planting date help insure top wheat yields. Southeast Farm Press magazine. October 9, 2012. http://southeastfarmpress.com/grains/proper-variety-planting-date-help-insure-top-wheat-yields (Southeast Farm Press magazine - Circulation: 50,000 in the Southeast).
- Preparation of ONE Climate educational video ? ?Crops Chronicles: Better Farming through Climate Management? http://www.youtube.com/watch?v=Dn5a60xDbPg (571 views since January 25, 2012).
- The impact of climate variability, especially ENSO, on forage crops, especially Ryegrass was conducted in 2012. Preliminary results of this work were presented to forage producers in the Montgomery, AL area. On February 12, 2013, results of this analysis as well as information on how ENSO impacts climate in Alabama well be presented at the Annual Meeting of Alabama Beef Cattle Association.

-Organization of ONE workshop to train county extension coordinators part of the Alabama Cooperative Extension System. The workshop was focused on climate variability, impacts on row crops production and traninig on the use of web-based climate decision support tools hosted in the Agroclimate website. (www.agroclimate.org). ~ 15 people attended the workshop

- Participation/organization in three in-service training focused on dissemination of information on Climate variability, identification or adaptation and mitigation strategies to reduce climate-related risks. ~ 180 people participate of the trainings.

Results
- Stakeholders are aware of the impacts of ENSO on climate and some of the web-based clomate tools to support management decisions, as well as some of the management strategies available to reduce climate-related risks.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
132	Weather and Climate
211	Insects, Mites, and Other Arthropods Affecting Plants

Outcome #3

1. Outcome Measures

3) Alabama stakeholders trained/educated in climate variability and climate change topics;

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
- The climate literacy of farmers, extension agents, extension faculty, and crop consultants were increased by the knowledge, information and trainings conducted through the Climate extension website, in-service trainings, workshops, meetings, emails

What has been done
1. One of the most important success stories as a result of the participatory approach to engaging stakeholders about managing for climate related risks is documented in the video: http://www.climatewatch.noaa.gov/video/2012/expanding-on-the-almanac-farmers-bet-on-climate-forecast-pays-off.
This video features one of the Alabama farmers participating of the Tri-state climate working group since April 2010. The farmer has attended the bi-annual meetings which have addressed topic and group working strategies such as: ?leaning from the past climate/weather event that impacted production & imagining the future?, seasonal climate variability, web-based climate decision support systems, adaptation option 1: Sod-based rotation, the adaptation exchange, adaptation option 2: conservation tillage?.
2. In-service tranings, workshops, and presentation of information during farmers meetings and webminars, participation in regional meetings, were conducted to train stakeholders not only from Alabama but the Southeast US.
3. A webpage (www.aces.edu/climate) was designed to disseminate climate information as well as educate stakeholders about climate. The website has received 2736 visits and 19,649 hits (75 hits per day) since development in April 1st, 2012.
4. Preparation and diffusion of two Extension Publications: 1) ?ABC?s of Climate variability?, 2) and ?Planting date and variety selection effects on Wheat Yield?. Since the publication online, the publication ??Planting date and variety selection effects on Wheat Yield? has been accessed by 187 people.

3. Around 7,500 people received climate information through in-service trainings, workshops, formal presentations, access to climate documents available on-line.

Results
Results from a survey conducted during a workshop with participation of ACES county extension coordinators showed that:
? The 2012 workshop on ?Climate information and the use of Agroclimate tools? increased knowledge level of the participants (Alabama county extension coordinators) by 40%, overall learning level by 83%, and learning level specifically on how to use the agroclimate tools by 50% (as judged by pre and post workshop surveys). This workshop increased the awareness of the participants about the website- agroclimate.org and increased interest of 89% of participants on

using the information from the website. Among total participants 43% was found interested in future similar workshops.
? Fifty-one per cent of the participants of the 2012 workshop were motivated to access the information on forecast and from Agroclimate tools.
- More than 2000 people within the Alabama Cooperative Extension Systems were reach out by email about climate related issues.

4. Associated Knowledge Areas

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

Outcome #4

1. Outcome Measures

4) Alabama growers, extension agents and extension specialists trained in using agroclimatic decision support tools

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Increase climate literacy among extension agents, county extension coordinators, and extension faculty

What has been done
-A workshop with title ?Climate information and the use of Agroclimate tools? for the Alabama county extension coordinators. 4 hours workshop ? 15 attendees

Results
?The 2012 workshop on ?Climate information and the use of Agroclimate tools? increased knowledge level of the participants (Alabama county extension coordinators) by 40%, overall

learning level by 83%, and learning level specifically on how to use the agroclimate tools by 50% (as judged by pre and post workshop surveys). This workshop increased the awareness of the participants about the website- agroclimate.org and increased interest of 89% of participants on using the information from the website. Among total participants 43% was found interested in future similar workshops.
?Fifty-one per cent of the participants of the 2012 workshop were motivated to access the information on forecast and from Agroclimate tools.

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

5) Capacities strengthened for integrating climate change risks and opportunities into state and regional development assistance

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
An increase in climate literacy, use of climate-based decision support tools and knowledge of how to use climate forecasts as part of the management decision process will provide stakeholders with information to reduce climate realted risks.

What has been done
- Hand-on trainings (workshops), presentations at farmers meetings, webinars for people working for ACES, meetings like the Alabama Soil and Water Conservation Society.

Results

The two extension publications: ?ABC?s of Climate variability? and ?Planting date and variety selection effects on Wheat Yield?. Provide basic and specific information that allows extension agents and county coordinators to transfer information about climate-related risks for row crops production. The training received by the extension agents and county extension coordinators (training the trainers) prepare them for discussions with farmers and team identification of climate-based information strategies to reduce production risks.

The increased participation of extension agents and farmers on climate information training (how to interpret a forecast, how to use the new ACES climate extension web site, how to use the climate-base decision support tools in Agroclimate) ensure they will have the basic knowledge to reach out our stakeholders

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
132	Weather and Climate
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants

Outcome #6

1. Outcome Measures

6)Capacities strengthened to access and use resources effectively to reduce risks associated with climate variability and climate change

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

7) Capacities strengthened to understand and manage water or natural resources in the context of climate vulnerability

Not Reporting on this Outcome Measure

Outcome #8

1. Outcome Measures

8) Identification of the most profitable row crops management practices by ENSO phase

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Adjustment of management practices based on the ENO forecast could be an strategy to recude climate-related risks.

What has been done
Results from research studies has been presented durign farmers meetings and included in to extension publications.

Results
The identification of the most profitable management practices by ENSO phase is a work in progress but progress was made for wheat. The participation of AL extension agents, extension specialists, and farmers during the Tri-state Climate workshop group meetings as well as the Climate Adaptation Exchange meeting guarantee they will have resources (information) about potential management practices that could be implemented or are currently implemented by farmers to reduce climate-related risks

4. Associated Knowledge Areas

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

Outcome #9

1. Outcome Measures

9) Identification of adaptation strategies to reduce climate change impacts.

Not Reporting on this Outcome Measure

Outcome #10

1. Outcome Measures

10) increased awareness of the impacts of climate on agricultural Production.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results
Awareness has been increased on the impact of ENSO phases on wheat and Ryegrass production in Alabama. Farmers and extension agents are aware of the impacts as well as potential management strategies to reduce those impacts

4. Associated Knowledge Areas

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

Outcome #11

1. Outcome Measures

Medium-term outcomes: The medium-term outcomes of the Climate Change Extension Program are: 1) implementation of a new system of management practices for row crops and vegetables according to ENSO phase

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results
A work in progress can be considered the implementation of a new set of management practices to reduce climate-relate risks. At the moment, on-going research is carried out to provide this type of information for different crops and different locations throughout the state. Farmers and extension agents are currently engage on these research projects

4. Associated Knowledge Areas

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

Outcome #12

1. Outcome Measures

2) Improved agronomic management row crops and vegetables

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done
Climate information disseminated through meetings, hands-on trainings on the use of web-based climate decision support decisions, as well as results from climate-based research projects have been the resources provided to farmers to support their management decisions in order to reduce climate-related risks

Results
Awareness has been raise on the impact of climate variability on agricultural crops.

4. Associated Knowledge Areas

KA Code	Knowledge Area
132	Weather and Climate
205	Plant Management Systems

Outcome #13

1. Outcome Measures

Long-term outcomes: The long-term outcomes of the Climate Change Extension Program are: 1) increased profitability of Alabama growers

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual

2012 0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results
Continuation of the current extension and research activities will result on increased knowledge of the potential impacts climate variability will have on agricultural production, management practices to reduce climate relate risks. This increased knowledge will result on increased profitability and increased environmental stewardship. These activities will also strength the response and support capacity of the ACES Agronomic Research, Extension and Education system

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
132	Weather and Climate
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants

Outcome #14

1. Outcome Measures

2) improved soil conditions

Not Reporting on this Outcome Measure

Outcome #15

1. Outcome Measures

3) reduced environmental impacts

Not Reporting on this Outcome Measure

Outcome #16

1. Outcome Measures

4) competitive Auburn and ACES Agronomic Research, Extension and Education system.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results
The continuation of the climate extension programs will strength people knowlege about how to use the climate information to reduce climate-related risks

4. Associated Knowledge Areas

KA Code	Knowledge Area
132	Weather and Climate
205	Plant Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy

Brief Explanation

Commody Prices is a factor that sometimes drives farmers decision over the technical information on the impact of climate of their crops. Even though farmers know their crop might be at risk due to climatic conditions, if prices are high they are going to increase

acreage not matter the outcome.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

In 2012, evaluation process was carried out during the extension activities: "Climate Adaptation Exchange" and the "Climate information and the use of Agroclimate tools workshop". A Pre and post evaluation survey was conducted during the workshop. Results from the evaluation showed that: 1) the 2012 workshop strengthened the understanding of extension faculty researchers about AgroClimate.org tools which can be used in agriculture and some climate variability issues faced by the growers, 2) The 2012 workshop increased knowledge level of the participants (Alabama county extension coordinators) by 40%, overall learning level by 83% and learning level specifically on how to use the AgroClimate.org tools by 50% (as judged by pre and post workshop surveys). This workshop increased the awareness of the participants about the website- AgroClimate.org.org and increased interest of 89% of participants on using the information from the website. Among total participants 43% was found interested in future similar workshops; 3) Fifty-one per cent of the participants of the 2012 workshop were motivated to access the information on forecast and from AgroClimate.org tools; 4) The Climate Extension website from Alabama Cooperative Extension System has distributed information to more than 2736people since May 2012 and more than 10 people per day are found to be interested to get information from this website

Key Items of Evaluation

The Climate Extension website from Alabama Cooperative Extension System has distributed information to more than 2736 people since May 2012 and more than 10 people per day are found to be interested to get information from this website