

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Sustainable Energy

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
133	Pollution Prevention and Mitigation	34%	0%	34%	0%
403	Waste Disposal, Recycling, and Reuse	33%	0%	33%	0%
605	Natural Resource and Environmental Economics	33%	100%	33%	0%
	Total	100%	100%	100%	0%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	4.9	0.0	4.8	0.0
Actual Paid Professional	1.5	0.2	2.0	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
155873	78066	204989	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
155873	78066	204989	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1377876	0	2585747	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research projects were developed and conducted to improve on existing technologies and identify new and emerging technologies. Examples of research projects under development or implementation are discussed below. Many projects are currently underway or in the planning stages.

A project evaluating the production of hydrogen from peanut hull and pine chips biomass is underway. Peanuts and pine chips are plentiful in Georgia. Additional tests are continuing on the use of char in Agriculture. Two chars (peanut hulls and pine chips) produced from the process are being evaluated for nutrient benefits, water holding and irrigation benefits, and carbon sequestrations benefits.

BioOil has been developed by pyrolyzing pine pellets in a pilot scale system. Blends of BioOil with other solvents/fuels have been prepared and are being characterized. BioOil blend analysis and testing is ongoing. Plans for engine performance testing will begin soon.

The transesterification of oils and fats to produce biodiesel is being studied. This work evaluates new sources of oils and fast that could be substrates for producing biodiesel. Once developed, the biodiesel will be tested for properties and behavior in engine testing. Georgia grasses are being hydrolyzed through a hot water extraction process to generate fermentable sugars. These were further broken down before fermentation. The final sugar solution will be fermented for producing ethanol.

Faculty provided workshops and field days; newsletters and/or fact sheets development and distribution; site visits; educational exhibits related to forestry.

In the LIFE program, seven workshops/resource clinics were held and one publication related to estate planning were distributed. Exhibits were also present at the workshops, field days, and demonstration in seven black-belt counties.

2. Brief description of the target audience

Farmers, agribusiness, community leaders, entrepreneurs

Small, minority, and limited resource landowners and farmers

3. How was eXtension used?

There are currently 1 leader and 20 active members associated Communities of Practice related to this planned program.

The membership in **eXtension** has continued to grow. Overall, there are currently 195 members in Communities of Practice in 62 approved communities. (Up from 150 members in 59 communities in 2012)

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	40743	6501	14312	2284

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

Patent Applications Submitted

Year: 2013
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of significant publications including articles, bulletins and extension publications. (excluding peer reviewed articles)

Year	Actual
2013	3

Output #2

Output Measure

- Number of educational contact hours generated from formal educational programs presented to county extension agents by state faculty directly associated with this planned program.

Year	Actual
2013	77

Output #3

Output Measure

- Number of educational contact hours generated from formal educational programs presented directly to clientele by state faculty directly associated with this planned program.

Year	Actual
2013	1931

Output #4

Output Measure

- Number of invited presentations by faculty directly resulting from the success of this planned program.

Year	Actual
2013	1

Output #5

Output Measure

- Number of site visits to landowners/farmers

Year	Actual
2013	300

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of additional direct extension contacts made by volunteers, staff, or county agents not receiving federal funds as a direct outcome of the work of federally funded faculty associated with this planned program.
2	Total number of site visits made to small, minority, and limited resource landowners and farmers

Outcome #1

1. Outcome Measures

Number of additional direct extension contacts made by volunteers, staff, or county agents not receiving federal funds as a direct outcome of the work of federally funded faculty associated with this planned program.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	12897

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Faculty associated with federal funds also make indirect contacts to clientele. These federally funded positions provide further impact to the community through county faculty, staff and volunteers not receiving federal funds. This county level programming results in thousands of additional direct Extension contacts.

What has been done

County faculty have presented research based information directly to clientele through presentations, workshops, on-site visits, meetings, and other trainings.

Results

UGA Extension extended lifelong learning to the people of Georgia through unbiased, research-based education.

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
403	Waste Disposal, Recycling, and Reuse
605	Natural Resource and Environmental Economics

Outcome #2

1. Outcome Measures

Total number of site visits made to small, minority, and limited resource landowners and farmers

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	300

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Several research studies have documented that small, minority and limited resource landowners and farmers are often not aware of and/or been denied access to opportunities that will aide in sustaining and/or increasing their land productivity in the area of forest management. Of Georgia's 24.7 million acres in forestland, 17.96 million acres are owned by private non-industrial landowners. Timber is the highest valued vegetative crop in Georgia. Georgia's forest resource creates a 12.7 billion dollar direct economic impact in the state.

What has been done

Specialist visited small, minority, and limited resource landowners and farmers to increase education and awareness of availability of federal and state programs.

Results

Specialist visited landowners and farmers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

Lack of the Farm Bill changes are still effecting targeted audience. Slumping housing market are still affecting prices as well as financial institutions lending practices. Weather is still a constant factor.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

The LIFE Program was able to increase the overall knowledge of 250 landowners in the following topic areas: wills and estate planning by over 70%; timber management and marketing by Over 50%; USDA cost-sharing programs by over 50%; wildlife mangement by over 45%and land management including surveying by over 60%. A total of 40 estate plans were completed for minority landowners provide clear title to over two million dollars in total assets including forestland.

Key Items of Evaluation