

2008 Clemson University and South Carolina State University Combined Research and Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

Cooperative working relationships between South Carolina State University and Clemson University continue in both research and Extension programs and activities. The State Extension Advisory Council serves both institutions and continues to provide merit review for all programs through the committee structure. Researchers and agents at both institutions are focused on issues in South Carolina. The institutions continue to raise the educational consciousness and awareness of state and national issues that impact limited-resource clientele as well as others, in order to improve their quality of life.

Extension and research activities in Fiscal Year 2008 reflected an increase in capacity with the addition of new faculty and agents. At Clemson, new faculty and agents have replaced those who have recently retired. A strategic programmatic shift has been made in support for technicians and equipment from grant resources rather than from state and federal funds. Research facilities on campus and at the research and education centers benefited from the addition of a wide range of new equipment funded with the one-time Hatch funds originally allocated in FY 2007.

The Experiment Station had more than 120 active research projects. Researchers issued 11 disclosures, submitted 9 patent applications, and received one patent. In addition, three license agreements were signed, two new cotton and three new soybean varieties were released. Faculty submitted 165 technical contributions for publication.

Evans-Allen Research funded 19 research projects. The focus areas included sustainable agriculture, food safety and nutrition, community leadership and economic development, youth and family development as well as education reform. Issues such as healthy eating/healthy lifestyles, obesity and academic enhancement were addressed. Research was conducted with GIS/hydrology flood warning system for first responders in rural areas. Six research articles were published in various journals.

There was increasing emphasis on research on a wide range of biofuel options using algae and unused agricultural and forestry resources. New developments were realized in the use of remote sensing to monitor water quality, and in the larger issue of water use options for South Carolina. Researchers are focusing on developing new crops and crop products enhanced through biotechnology, which will, in turn, have a positive impact on economic development in the state.

Clemson University Extension conducted a total of 12,508 programs and/or activities reaching over 242,325 participants. Some 5,761 federally funded activities (IPM, EFNEP, Fire Ant) were conducted. Of the 242,325 individuals participating in programs, 85% reported gaining knowledge. The total number of Extension contacts was 431,542. In addition to programs, Extension contacts reflect repeated interactions with clientele via face-to-face interaction, telephone, office walk-ins, farm and home visits, letter, electronic mail, fax, interactive video, newsletters and/or periodical distribution. A total of 208.7 FTEs were expended to conduct Extension programs as reported to the Clemson University Management Information System (CUMIS), representing all employees paid by Extension appointment who are responsible for "programmatic work," including 4-H paraprofessionals, Ag. Science Assistants, grant hires, and temporary hires.

Total Actual Amount of professional FTEs/SYs for this State

Year:2008	Extension		Research	
	1862	1890	1862	1890
Plan	135.0	42.0	40.3	13.0
Actual	208.7	42.0	48.1	13.0

II. Merit Review Process

1. The Merit Review Process that was Employed for this year

- Internal University Panel
- External Non-University Panel
- Expert Peer Review

2. Brief Explanation

The Merit Review Committee was given progress reports throughout the year and a year-end summary of all programs. South Carolina did not institute any new programs in FFY 2008, and so no new program review activity was required from the state's Merit Review Committee.

Peer review is integral to the approval of research projects at both South Carolina State University and Clemson University. All projects submitted to USDA were peer reviewed.

III. Stakeholder Input

1. Actions taken to seek stakeholder input that encouraged their participation

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey specifically with non-traditional groups
- Survey of selected individuals from the general public

Brief Explanation

Meetings and listening sessions were conducted. Surveys were used in several program areas to identify needs and concerns.

2(A). A brief statement of the process that was used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

1. Method to identify individuals and groups

- Use Advisory Committees
- Use Internal Focus Groups
- Use External Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Surveys

Brief Explanation

Stakeholder input was encouraged through direct contact – phone calls and letters to groups and individuals. Group meetings and listening sessions were also conducted. Surveys were used in several program areas to identify needs and concerns.

2(B). A brief statement of the process that was used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting with the general public (open meeting advertised to all)
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional groups
- Meeting with invited selected individuals from the general public

Brief Explanation

3. A statement of how the input was considered

- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Staff Hiring Process
- In the Action Plans
- To Set Priorities

Brief Explanation

Brief Explanation of what you learned from your Stakeholders

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
5203635	1529788	3506290	1827123

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	5636474	1529788	6002760	1827123
Actual Matching	5636474	1529788	6409845	1827123
Actual All Other	1811750	0	0	0
Total Actual Expended	13084698	3059576	12412605	3654246

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous years				
Carryover	273373	0	2496470	0

V. Planned Program Table of Content

S. NO.	PROGRAM NAME
1	Sustainable Animal Production Systems
2	Sustainable Agriculture Production for Horticultural Crops
3	Sustainable Agronomic Crop Systems
4	Water Quality and Water Quantity
5	Biotechnology
6	Food Safety and Nutrition
7	Community, Leadership, and Economic Development
8	Integrated Pest Management
9	4-H Youth Development and Families
10	Environmental Conservation for Wildlife
11	Sustainable Forest Management

Program #1

V(A). Planned Program (Summary)

1. Name of the Planned Program

Sustainable Animal Production Systems

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	20%	20%	20%	20%
302	Nutrient Utilization in Animals	20%	20%	20%	20%
303	Genetic Improvement of Animals	15%	15%	15%	15%
307	Animal Management Systems	20%	20%	20%	20%
308	Improved Animal Products (Before Harvest)	15%	15%	15%	15%
315	Animal Welfare/Well-Being and Protection	10%	10%	10%	10%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	9.0	5.5	4.5	0.0
Actual	16.6	2.5	4.4	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
656946	152979	934852	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
656946	152979	1137976	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Forage-fed beef research as well as approaches to sustainable small ruminant production is part of an expanding animal focus. There is a wide range of work underway in the area of livestock improvement and work continues on exploring the genetic bases for resistance and immunity to avian diseases as well as on improving the nutritional and market value of milk.

Two veterinarians were hired and will begin work this fall. *Cattlemen's Field Days* were conducted reaching approximately 70 people. This program will be delivered at all CU bull tests in the future with the program topics determined by committee to address producer needs.

A *Grass Masters* workshop was conducted. This multi-topic day-long fee-based workshop delivered information to producers on establishment and management of forage crops.

Multiple dairy programs have been developed by the state extension dairy specialist. Topics covered have ranged from lameness to nutrition and have been well received.

Equine management workshops remain a strong program with multiple sites being served in all areas of the state. These multi-night fee-based meetings cover diverse topics ranging from forage and waste management to reproduction and facilities construction. Local veterinarians are often included on the program to assist in linking producers, industry and Extension.

The *Southeast Beef Cattle Marketing School* was held in Gaffney and Marion with approx. 55 attendees. Participants learned marketing practices to improve profitability and management practices to improve calf value. The *2008 Jr. Beef Roundup* (>200 participants) gave youth across the region opportunities to develop leadership, responsibility, and livestock management.

2. Brief description of the target audience

Producers, Limited-Resource Farmers and Extension personnel, agency personnel

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	25225	4300	120	120
2008	23420	979766	0	0

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

Patent Applications Submitted

Year	Target
Plan:	1
2008 :	1

Patents listed

Treated Feed Supplement Capsule for Ruminants

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	6	
2008	3	6	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Disclosures

Year	Target	Actual
2008	2	1

Output #2

Output Measure

- Licenses

Year	Target	Actual
2008	1	1

Output #3

Output Measure

- New products, processes, procedures and policies

Not reporting on this Output for this Annual Report

Output #4

Output Measure

- National Media Placements

Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Increase of outside funds through grants, contracts and gifts

Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Number of educational workshops conducted

Year	Target	Actual
2008	365	440

Output #7

Output Measure

- Number of people completing educational workshops

Year	Target	Actual
2008	6400	18752

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of publications authored or co-authored (fact sheets, papers presented at Extension meetings, etc.)
2	Increased percentage of forage fed beef production in the state and the region.
3	Number of people reporting increased knowledge
4	Number of people using grazing management practices
5	Number of persons who adopted practices

Outcome #1

1. Outcome Measures

Number of publications authored or co-authored (fact sheets, papers presented at Extension meetings, etc.)

Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Increased percentage of forage fed beef production in the state and the region.

Not reporting on this Outcome for this Annual Report

Outcome #3

1. Outcome Measures

Number of people reporting increased knowledge

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	3200	15550

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Due to a host of outside influences, the cost of cattle feeds has increased over 100% in the last year. Producers have seen this increased cost of production in the form of higher production costs and dwindling profit margins. In order to combat this higher cost of production, producers have to increase their production either through increased weaning weights or increased conception rates; ideally both. Unfortunately, both of these numbers (weaning weights and conception rates) are tied to nutrition.

What has been done

Extension educated producers on the idea of utilizing cool season annual forages and legumes to increase available feed supply. Once forages were established and actively growing, forage samples were sent to the lab to be analyzed for quality. With high quality forages available, a management intensive grazing program was implemented that maximized the utilization of the forages either through grazing or mechanical harvesting of the surplus forages as round bale silage (balage).

Results

Of 17,820 people participating in programs, 87% gained knowledge. By utilizing Extension recommendations, one producer was able to maintain weaning weights without feeding any commodity feed thereby saving (by his estimates) \$7000 on corn gluten. In addition, the surplus forage was baled as round bale silage with an estimated value of \$60/roll and 2000 rolls that equates to \$120,000 in stored feed that will be available to feed his cattle in the event of another drought or for sale as a high quality forage. By the producer's accounts, he is almost \$130,000 dollars better off this year than last.

4. Associated Knowledge Areas

KA Code	Knowledge Area
315	Animal Welfare/Well-Being and Protection
307	Animal Management Systems

Outcome #4

1. Outcome Measures

Number of people using grazing management practices

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	1700	281

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The program objective was to improve the production efficiency of confined animal systems and marketing of grazing livestock.

What has been done

Twenty-seven producers from nine South Carolina counties marketed 1,455 calves in truckload lots. All calves were vaccinated for respiratory disease, preconditioned for a minimum of 45 days, and were source and age verified through USDA Process Verified Program (PVP).

Results

Of the 1,455 calves sold, 888 were sold directly off farm and 567 were sold in commingled truckloads comprised of cattle from small farmers. Cattlemen selling on the commingled loads averaged less than 25 head per farmer, allowing small producers the opportunity to maximize profitability by selling in truckload lots. This year source and age verified truckload lots sold for \$0.12 per pound more than traditional weekly livestock auctions resulting in \$109,125 in additional income for area cattle farms (over \$4,000 per farm).

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
302	Nutrient Utilization in Animals

Outcome #5

1. Outcome Measures

Number of persons who adopted practices

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	295

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Limited resource producers are limited in areas of education, capital and acreage. it is difficult to compete with larger agricultural enterprises in marketing their products. Producers must pool their resources to purchase feed, seed, animal health products and fertilizer. Small farmers should explore niche marketing.

What has been done

The formation of farmers marketing cooperatives were established. Members were allowed access to farm equipment scales, squeeze chutes and livestock trailer rentals for a small fee, which saved time and money. Producers coordinated group orders of seeds, feed, minerals and dewormer.

Results

By renting through the cooperatives, small farmers saved an average of \$15,000 plus. The members shared the use of equipment, labor and other resources. Of the 5600 reached, 100% of the farmers changed their conditions regarding the way they conducted business and were elated.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
315	Animal Welfare/Well-Being and Protection
308	Improved Animal Products (Before Harvest)

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy

Brief Explanation

There has been an increased cost of cattle feeds. Drought has affected cost of production.

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- Case Study

Evaluation Results

Evaluation results noted an increased cost of cattle feeds.

Key Items of Evaluation

Program #2

V(A). Planned Program (Summary)

1. Name of the Planned Program

Sustainable Agriculture Production for Horticultural Crops

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms	10%	10%	10%	10%
202	Plant Genetic Resources	10%	10%	10%	10%
204	Plant Product Quality and Utility (Preharvest)	10%	10%	10%	10%
205	Plant Management Systems	15%	15%	15%	15%
211	Insects, Mites, and Other Arthropods Affecting Plants	10%	10%	10%	10%
212	Pathogens and Nematodes Affecting Plants	10%	10%	10%	10%
215	Biological Control of Pests Affecting Plants	10%	10%	10%	10%
216	Integrated Pest Management Systems	15%	15%	15%	15%
601	Economics of Agricultural Production and Farm Management	10%	10%	10%	10%
Total		100%	100%	100%	100%

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	26.0	5.5	4.0	2.0
Actual	32.2	3.5	11.8	2.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1089825	458936	959168	730849
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1089825	458936	1045593	730849
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research continued on specific issues which are of concern to producers and consumers regarding turf, fruit, ornamentals, vegetables, organic and nutraceutical crops. The research focus remained on increasing profitability and productivity for growers and decreasing the environmental impact of production practices.

A total of 190 horticulture crops programs were conducted, reaching over 5,660 people. Extension personnel reported that recommended Horticulture ICM practices were adopted on over 180,391 acres in SC, and over 33,583 acres were planted to new, alternative and high value horticultural crops. 273 participants reported profitability gain. The number of people trained to become Master Gardeners was 397. Over 2,446 Master Gardeners contributed over 42,000 hours of service conducting programs and activities such as oral presentations, newsletters, radio programs, and TV appearances, a \$756,000 value of time. A total of 23,611 consumers received information through PAWS hotline and the Home and Garden Information Center. There were 6,512,959 visits to university horticulture websites.

Farmers marketing cooperatives with the help of 1890 Extension made it possible for members to access farm equipment, such as fertilizer/lime spreaders, scales, squeeze chutes and trailer rentals. The equipment assisted the producers in the complete production cycle of their product. The fertilizer spreader saved producers \$30 to \$50 per ton on fertilizer costs and \$30 to \$45 per ton on lime costs. A ryegrass order of 4700 pounds saved producers \$4 per bag versus purchasing individually, which was a savings of \$160 per ton.

2. Brief description of the target audience

Producers, small farmers and Extension personnel, horticulture professionals, residents in counties with Master Gardener programs, Master Gardeners, consumers

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	20500	4500	50	100
2008	31081	158315	0	0

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

Patent Applications Submitted

Year	Target
Plan:	1
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	6	
2008	0	67	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Disclosures

Year	Target	Actual
2008	3	2

Output #2

Output Measure

- Licenses

Not reporting on this Output for this Annual Report

Output #3

Output Measure

- New Products, processes, procedures and policies

Not reporting on this Output for this Annual Report

Output #4

Output Measure

- National Media Placements

Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Percent Increase of outside funds through grants, contracts and gifts

Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Number of educational workshops conducted

Year	Target	Actual
2008	185	969

Output #7

Output Measure

- Number of people completing horticultural educational workshops

Year	Target	Actual
2008	5100	25013

Output #8

Output Measure

- Identifying and characterizing genes

Year	Target	Actual
2008	{No Data Entered}	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of participants reporting profitability gain
2	Number of new people trained to become Master Gardeners
3	Number of Master Gardeners reporting activities and programs
4	Number of activities conducted by Master Gardeners
5	Number of hours of service contributed by Master Gardeners
6	Number of people receiving information from Master Gardeners
7	Percent increase in profitability in the peach and melon industries
8	Number of participants gaining knowledge
9	Number of acres affected by ICM
10	Number of acres planted to new alternative crops
11	Decrease pesticide applications on leafy greens
12	Turfgrass varieties with increased drought tolerance
13	Reducing season long wilt in seedless watermelons
14	Identifying and characterizing genes

Outcome #1

1. Outcome Measures

Number of participants reporting profitability gain
Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Number of new people trained to become Master Gardeners

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	1100	397

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The program seeks to inform horticulture professionals, master gardeners, and consumers about environmentally sound horticultural practices that will improve communities.

What has been done

The Master Gardener educational series was taught by agents throughout the state.

Results

The number of new people trained and receiving certification as Master Gardeners was 397.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
216	Integrated Pest Management Systems

Outcome #3

1. Outcome Measures

Number of Master Gardeners reporting activities and programs

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	1100	2446

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The program seeks to inform horticulture professionals, master gardeners, and consumers about environmentally sound horticultural practices that will improve communities.

What has been done

2,446 Master Gardeners reported that they conducted activities and programs after being trained, contributing over 42,000 hours of service.

Results

Over 51,080 people received information from Master Gardeners through telephone calls, office visits, workshops, and other activities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
216	Integrated Pest Management Systems

Outcome #4

1. Outcome Measures

Number of activities conducted by Master Gardeners

Not reporting on this Outcome for this Annual Report

Outcome #5

1. Outcome Measures

Number of hours of service contributed by Master Gardeners

Not reporting on this Outcome for this Annual Report

Outcome #6

1. Outcome Measures

Number of people receiving information from Master Gardeners

Not reporting on this Outcome for this Annual Report

Outcome #7

1. Outcome Measures

Percent increase in profitability in the peach and melon industries

Not reporting on this Outcome for this Annual Report

Outcome #8

1. Outcome Measures

Number of participants gaining knowledge

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	5100	21074

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The program educates horticulture professionals, master gardeners, and consumers about environmentally sound horticultural practices to improve communities.

What has been done

Some 929 programs were conducted.

Results

Approximately 88% of the participants in educational programs reported that they gained knowledge.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
216	Integrated Pest Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants

Outcome #9

1. Outcome Measures

Number of acres affected by ICM

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	40300	180391

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Participants will adopt new horticultural practices to reduce negative environmental impacts of horticultural cropping systems.

What has been done

A total of 190 horticulture crops programs were conducted, reaching over 5,660 people.

Results

Extension personnel reported that recommended Horticulture ICM practices were adopted on over 180,391 acres in SC.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
204	Plant Product Quality and Utility (Preharvest)
601	Economics of Agricultural Production and Farm Management
212	Pathogens and Nematodes Affecting Plants
216	Integrated Pest Management Systems

Outcome #10

1. Outcome Measures

Number of acres planted to new alternative crops

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	16000	33583

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Participants will adopt new horticultural practices to reduce negative environmental impacts of horticultural cropping systems.

What has been done

Over 33,583 acres were planted to new, alternative and high value horticultural crops.

Results

Some 273 participants reported profitability gain.

4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management
205	Plant Management Systems

Outcome #11

1. Outcome Measures

Decrease pesticide applications on leafy greens

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Pesticides add significant costs to the production of leafy greens and reduces the profitability of growers.

What has been done

Researchers have identified techniques to decrease the number of pesticide applications from 14 to five per season on leafy greens, such as collards.

Results

Farmers indicated that they saved money, with larger commercial growers saving about \$180.00 per acre.

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants

Outcome #12

1. Outcome Measures

Turfgrass varieties with increased drought tolerance

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The golf course industry must spend a significant amount of money on irrigation, especially along the coast in the sandy soils.

What has been done

New turfgrass varieties have been produced with enhanced drought tolerance.

Results

Golf course operators will need less water to maintain their courses using the new drought resistant turfgrass varieties

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
202	Plant Genetic Resources

Outcome #13

1. Outcome Measures

Reducing season long wilt in seedless watermelons

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Season long wilt in seedless watermelons reduces productivity and increases growing costs

What has been done

Researchers found that Cahaba White vetch is effective in reducing season-long wilt in seedless watermelons.

Results

This new approach to managing season long wilt will lower production costs and increase productivity for growers who use this technique

4. Associated Knowledge Areas

KA Code	Knowledge Area
212	Pathogens and Nematodes Affecting Plants
205	Plant Management Systems

Outcome #14

1. Outcome Measures

Identifying and characterizing genes

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The research is a form of educational assistance to farmers to aid evaluating and adopting integrated pest management techniques. The research identifies genes involved in the synthesis of sex pheromones in the fruitfly, *Drosophila melanogaster*. The development of targeted pest control measures would be enhanced by a detailed understanding of the molecular basis for pheromone regulation and perception. The research, also, provides training to under graduate students; improving their ability to pursue graduate studies.

What has been done

RNA was extracted from subject animals and used for hybridization to DNA microarrays. The resulting data set was screened for candidate pheromone synthesis genes by comparing the microarrays from different lines of fruitflies. Candidate genes for pheromone perception were identified with the same methods.

Results

Classical genetic analysis has determined that at least 4 genes on 3 chromosomes contribute to the production of an important sex pheromone mix in the species. Identification of specific genes that control pheromone production and perception are being reviewed. DNA microarrays have been used to identify genetic differences between strains that vary with respect to pheromone production and perception. Candidate genes for pheromone synthesis have been narrowed down to 3 genes in one previously identified genetic interval and 4 candidate genes in another interval. Correlated differences in several olfactory binding proteins indicate a genetic basis for variation in pheromone perception. The research is completed. In the process of writing final bulletin for publication of results.

4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems
215	Biological Control of Pests Affecting Plants
204	Plant Product Quality and Utility (Preharvest)

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy

Brief Explanation

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

1. Evaluation Studies Planned

- After Only (post program)

Evaluation Results

Approximately 90% of the participants in educational programs reported that they gained knowledge.

Key Items of Evaluation

Program #3

V(A). Planned Program (Summary)

1. Name of the Planned Program

Sustainable Agronomic Crop Systems

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
204	Plant Product Quality and Utility (Preharvest)	10%	10%	10%	10%
205	Plant Management Systems	10%	10%	10%	10%
211	Insects, Mites, and Other Arthropods Affecting Plants	10%	10%	10%	10%
212	Pathogens and Nematodes Affecting Plants	15%	15%	15%	15%
213	Weeds Affecting Plants	10%	10%	10%	10%
215	Biological Control of Pests Affecting Plants	10%	10%	10%	10%
216	Integrated Pest Management Systems	15%	15%	15%	15%
601	Economics of Agricultural Production and Farm Management	10%	10%	10%	10%
604	Marketing and Distribution Practices	10%	10%	10%	10%
Total		100%	100%	100%	100%

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	13.0	0.0	7.5	0.0
Actual	25.0	0.0	7.6	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
1088252	0	780134	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1088252	0	1099919	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research activities centered around disease and insect resistance as well as improved management systems for peanuts, cotton, tobacco and soybeans. A new effort was initiated on switchgrass as an alternative fuel source. Work continues in agroecology, conservation tillage and remote sensing technologies for applications of fertilizers and pesticides.

Approximately 350,250 acres were affected by Integrated Crop Management. New alternative crops, such as kohlrabi, cilantro, parsley, leeks, and red beets were planted. A total of 239 people reported profitability gain. Agents worked with SC Dept of Agriculture to issue nutrition coupons to seniors on limited income.

A total of 626 programs were conducted in this focus area, reaching over 16,350 people (6,850 represent unduplicated counts). Over 86% gained knowledge. Programs were conducted in the areas of Risk Management for Agricultural Firms, Agricultural Bio-security, Sustainable Agricultural Production Systems, Pesticide Applicator Training and Integrated Pest Management. Specific training included turf grass pest identification and management demonstrations, fire ant management training, vegetable production field day, beekeepers short course, and drip irrigation demonstrations, which showed the increased efficiency of water utilization and increased crop growth. Clemson Extension's peanut program has a total economic impact of over \$3 million. The peanut variety evaluation determined which varieties growers choose even when less than optimal varieties are available. By showing growers that adjuvants and certain types of foliar nutrients are unnecessary and even counter-productive, CE has conservatively, an impact of at least \$400,000 (\$10/ac x 40,000 ac). By demonstrating yield response to following soil test guidelines, CE has an additional annual impact of at least \$400,000 (\$20/ac x 20,000 ac). The Clemson Extension Wheat Variety Challenge annually invites each breeding program (public and private) to submit what they believe to be their most competitive lines for SC production conditions. The program evaluates yield, test weight, disease resistance, insect resistance, and straw strength against current variety standards. Results are disseminated each August showing multi-year performance and which varieties are recommended as out-performers under SC conditions. Results of the CE Wheat Variety Challenge are the major factor in whether new releases are accepted by growers and how soon that occurs.

2. Brief description of the target audience

Producers, Extension and other agency personnel

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	26000	2000	100	50
2008	16350	21525	0	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	1

Patents listed

Tobacco Harvester for Prevention of Spread of Bacterial Wilt

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	5	
2008	0	10	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Disclosures

Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Licenses

Not reporting on this Output for this Annual Report

Output #3

Output Measure

- New products, processes, procedures and policies

Not reporting on this Output for this Annual Report

Output #4

Output Measure

- National media placements

Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Percent Increase of outside funds through grants, contracts and gifts

Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Number of people completing educational workshops

Year	Target	Actual
2008	4100	16350

Output #7

Output Measure

- Number of educational workshops conducted

Year	Target	Actual
2008	320	626

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of participants reporting profitability gain
2	Number of acres affected by ICM programs
3	Number of acres planted to new agronomic crops
4	Numbers of acres with animal, municipal, or industrial wastes applied
5	Number of people reporting increased knowledge
6	Number of new wheat varieties with increased disease and pest resistance.
7	Number of new high yielding soybean cultivars with resistance to nematodes which will improve profitability for growers
8	Decreasing fertilizer use and increasing profitability
9	Increasing profitability of cotton farmers

Outcome #1

1. Outcome Measures

Number of participants reporting profitability gain

Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Number of acres affected by ICM programs

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	30000	350250

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Clemson Extension Wheat Variety Challenge annually invites each breeding program (public and private) to submit what they believe to be their most competitive lines for SC production conditions. The program evaluates yield, test weight, disease resistance, insect resistance, and straw strength against current variety standards.

What has been done

Results are disseminated each August showing multi-year performance and which varieties are recommended as out-performers under SC conditions. Results of the CE Wheat Variety Challenge are the major factor in whether new releases are accepted by growers and how soon that occurs.

Results

Our multi-year performance show that the superior performers we recommend out-yield the test average by up to 8%. Therefore, using conservative estimates of a 4% yield advantage, this program had an economic impact of \$2.4 million in 2008 (.04 x 50 bu/ac x 200,000 ac). This does not include additional economic returns from greater disease and insect resistance in the recommended varieties.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
205	Plant Management Systems
216	Integrated Pest Management Systems

Outcome #3

1. Outcome Measures

Number of acres planted to new agronomic crops

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	11000	711

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Participants will adopt new agronomic production practices, improve profitability and reduce the negative environmental impacts of agronomic cropping systems.

What has been done

Over 711 acres were planted to new alternative crops, such as kohlrabi, cilantro, parsley, leeks, and red beets.

Results

A total of 239 people reported profitability gain

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #4

1. Outcome Measures

Numbers of acres with animal, municipal, or industrial wastes applied

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	15000	20877

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Participants will adopt new agronomic production practices, improve profitability and reduce the negative environmental impacts of agronomic cropping systems.

What has been done

Some 354 programs were conducted reaching over 10,281 persons in Integrated Crop Management for Agronomic Crops.

Results

As a result, approximately 20877 acres were applied with animal, municipal, or industrial wastes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #5

1. Outcome Measures

Number of people reporting increased knowledge

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	3100	14122

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Participants will adopt new agronomic production practices, improve profitability and reduce the negative environmental impacts of agronomic cropping systems.

What has been done

In the total Sustainable Agronomic Crop Systems Program, 626 programs were conducted reaching 16,350.

Results

Approxiamtely 86% of the participants reported knowledge gain.

4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems
205	Plant Management Systems

Outcome #6

1. Outcome Measures

Number of new wheat varieties with increased disease and pest resistance.

Not reporting on this Outcome for this Annual Report

Outcome #7

1. Outcome Measures

Number of new high yielding soybean cultivars with resistance to nematodes which will improve profitability for growers

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	1	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems
215	Biological Control of Pests Affecting Plants
212	Pathogens and Nematodes Affecting Plants
204	Plant Product Quality and Utility (Preharvest)

Outcome #8

1. Outcome Measures

Decreasing fertilizer use and increasing profitability

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The rising costs of fertilizers negatively impacts cotton producer profitability

What has been done

Researchers used GPS/remote sensing/precision farming techniques to compare traditional fertilizer applications and reduced rate applications.

Results

They have determined that cost savings of 40 percent could be realized for cotton farmers in reduced rate fertilizer applications

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

Outcome #9

1. Outcome Measures

Increasing profitability of cotton farmers

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The control of nematodes drives down profitability for cotton farmers

What has been done

Researchers have determined that a single specific nematicide can be effective in lieu of other seed treatments.

Results

South Carolina farmers can potentially save \$1 million annually using research recommendations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy

Brief Explanation

The extreme drought conditions affected production costs.

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

1. Evaluation Studies Planned

- Before-After (before and after program)

Evaluation Results

The program evaluates yield, test weight, disease resistance, insect resistance, and straw strength against current variety standards. Results of the CE Wheat Variety Challenge are the major factor in whether new releases are accepted by growers and how soon that occurs.

Key Items of Evaluation

Program #4

V(A). Planned Program (Summary)

1. Name of the Planned Program

Water Quality and Water Quantity

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water	30%	30%	30%	30%
112	Watershed Protection and Management	20%	20%	20%	20%
131	Alternative Uses of Land	20%	20%	20%	20%
133	Pollution Prevention and Mitigation	20%	20%	20%	20%
134	Outdoor Recreation	10%	10%	10%	10%
Total		100%	100%	100%	100%

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	6.0	0.0	3.0	0.0
Actual	8.3	0.0	5.7	0.0

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

Extension		Research	
Smith-Lever 3b & 3c 277819	1890 Extension 0	Hatch 1420634	Evans-Allen 0
1862 Matching 277819	1890 Matching 0	1862 Matching 937204	1890 Matching 0
1862 All Other 0	1890 All Other 0	1862 All Other 0	1890 All Other 0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research efforts were expanded on the remoting sensing of water quality in South Carolina's rivers. This is a new approach being used by Clemson scientists in water quality research. A continuing drought and competition for water resources has increased the visibility of water quality and quantity issues in the state. Research on gauging the impact of new residential development on natural water systems continued. Clemson is moving forward with research to determine the fate and the effects of metals, pharmaceuticals and other substances in aquatic ecosystems.

Carolina Clear is a comprehensive education and outreach initiative designed to inform South Carolinians about stormwater runoff and about practices individuals can undertake to minimize impacts. To date, Carolina Clear programming is active in more than 30 municipalities and counties covering six (6) urbanized areas (Myrtle Beach, Charleston, Columbia, Florence, Darlington, Sumter and Greenville-Pickens). These communities represent almost half of those permitted for stormwater management. Carolina Clear is utilizing a regional approach, forming education consortia within watersheds to coordinate development of public education and strategic planning to implement customized plans for each urbanized area. On-the-ground efforts include rain garden workshops and installations, technical training workshops and presentations to homeowner associations on stormwater pond management.

Carolina Clear has also launched its mass media campaign in the Charleston and Myrtle Beach areas, which includes seven billboards on major transportation routes and public service announcements on television and radio. The purpose of the messages are to highlight what stormwater is and how everyone may be contributing unknowingly to stormwater pollution through not picking up after their pet, over fertilizing and allowing motor oil and other chemicals to go down the storm drain. Carolina Clear has launched a new website that highlights each regional effort and also includes a toolbox of resources for the communities of South Carolina (www.clemson.edu/carolinaclear).

A number of Farm City Day programs were conducted. There has been coordination of Master Naturalist sites in the low-country and upstate and a Jr. Master Naturalist series in the upstate. Team members assisted in organizing the 9th Annual Native Grass Symposium held in Columbia. Several members hosted sites for the Master Tree Farmer Series program on Forest Risks and Risk Management. A regional workshop with information updating herbicides used in forestry practices was provided. The team members continue to assist local county forestry and forest landowner associations and answering questions one on one.

2. Brief description of the target audience

Farm and forest landowners, Extension agents, and administrators, natural resource professionals, Land management agency personnel, and user groups, nature-based tourism operators/industry, South Carolina citizens, tourists, children in school, after-school, summer and 4-H programs, agents and volunteers, urban, suburban and rural residents, farmers, ranchers, poultry and swine producers, foresters urban agents, agency personnel, urban planners and land owners/managers, municipal officials, and local community groups statewide, managers, government officials, and recreation and tourism operators

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	6500	2000	0	0
2008	8106	318057	0	0

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

Patent Applications Submitted

Year	Target
Plan:	1
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	9	
2008	0	11	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Disclosures

Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Licenses

Not reporting on this Output for this Annual Report

Output #3

Output Measure

- New Products, processes, procedures and policies

Not reporting on this Output for this Annual Report

Output #4

Output Measure

- National Media Placements

Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Percentage increase in outside funds from grants, contracts and gifts

Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Number of educational workshops conducted

Year	Target	Actual
2008	155	285

Output #7

Output Measure

- Number of people completing educational workshops

Year	Target	Actual
2008	4200	8106

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of people gaining knowledge
2	Number of people using practices learned
3	Number of people reporting enhanced income opportunities from natural resources
4	Policies for economically viable land use preserving water quality
5	Strategies for TMDL development and implementation at the watershed level

Outcome #1

1. Outcome Measures

Number of people gaining knowledge

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	3200	7399

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Landowners need information regarding methods to reduce animal waste and pollution in streams and to improve water quality, wetland, and wetland management.

What has been done

Agents conducted 285 programs in the area of water quality and quantity reaching 8,106 people.

Results

Of those participating, 7,399 persons (91%) gained knowledge.

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
131	Alternative Uses of Land
134	Outdoor Recreation
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management

Outcome #2

1. Outcome Measures

Number of people using practices learned

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	2200	2071

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Watersheds are evaluated based on the EPA standards that are a part of the Clean Water Act of 1972, which sets the amount of pollutant a water body can contain. The most prevalent of the pollutants in South Carolina is fecal coliform. The presence of fecal coliform is an indication that animal wastes are entering the water body. Based on EPA's standards for water quality, water bodies which contain more than 200 counts/100ml of fecal coliform are considered impaired. Cane Creek Watershed in Oconee County is one of these watersheds.

What has been done

A Section 319 TMDL project was implemented to encourage homeowners to repair failing septic systems which could be contributing fecal coliform to the local streams and creeks. Many homeowners fail to repair failing systems for economic reasons (repairs have been \$2400 but range from \$500 to \$12,000). One homeowner had a complete septic system installed from the tank out.

Results

The total cost of the replacement was \$3000. This project pays half the cost of repair if repaired by a certified septic contractor and if the homeowner installs a riser. The purpose of the riser is to reduce the cost and encourage proper maintenance of the system. The homeowner indicated that he could not have afforded to do the repair without the assistance provided through this project. This project alone helped reduce the amount of pollutant in the Cane Creek Watershed. At this point, the project has financially assisted nine homeowners with repairing failing septic systems.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
131	Alternative Uses of Land
134	Outdoor Recreation

Outcome #3

1. Outcome Measures

Number of people reporting enhanced income opportunities from natural resources

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	210	190

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Landowners are interested in opportunities for enhanced income from their property.

What has been done

Water quality and quantity programs were conducted including natural resource enterprise workshops, farmer's market managers' training and new markets for forest production.

Results

Some 190 landowners reported enhanced income opportunities through increased value of hunting leases and development of a sporting clays facility on a farm.

4. Associated Knowledge Areas

KA Code	Knowledge Area
131	Alternative Uses of Land
134	Outdoor Recreation

Outcome #4

1. Outcome Measures

Policies for economically viable land use preserving water quality

Not reporting on this Outcome for this Annual Report

Outcome #5

1. Outcome Measures

Strategies for TMDL development and implementation at the watershed level

Not reporting on this Outcome for this Annual Report

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy

Brief Explanation

One homeowner indicated that he could not have afforded to do the repair of his septic system without the assistance provided through this project.

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- Case Study

Evaluation Results

Cane Creek Watershed in Oconee County was identified as impaired based on EPA's standards for water quality. This water body contained more than 200 counts/100ml of fecal coliform. This project alone helped reduce the amount of pollutant in the Cane Creek Watershed.

Key Items of Evaluation

Program #5

V(A). Planned Program (Summary)

1. Name of the Planned Program

Biotechnology

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms	25%	25%	25%	25%
202	Plant Genetic Resources	25%	25%	25%	25%
303	Genetic Improvement of Animals	20%	20%	20%	20%
304	Animal Genome	20%	20%	20%	20%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	10%	10%	10%	10%
Total		100%	100%	100%	100%

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	10.0	0.0
Actual	0.0	0.0	10.1	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
0	0	1004477	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	1176861	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Work continues on the use of transgenic technologies to improve fruit tree stress resistance, produce superior fruit and expand the geographic areas where fruit can be grown in the state. Scientists are working to identify and characterize genes that confer natural resistance to plum pox virus, which is also one of the 10 most dangerous threats of bioterrorism.

Progress continued to be made in understanding how legumes interact with bacteria in the soil to generate their own fertilizer, The goal is to transfer this ability to other crops

Biotechnology is being applied to improve the production efficiencies and reducing the cost of producing biofuels through the testing of new strains of yeast used in the fermentation process of biofuels. Also in the area of biofuels, algae and other microorganisms are being studied as bioprocessors to produce high value compounds from agricultural waste.

A portion of Clemson's biotechnology research is focused on animals as work continues in mammary development to increase profitability in dairy, beef, swine and sheep operations .

2. Brief description of the target audience

Agricultural biotechnology research has a grower and industry focus. New approaches to improving crop and animal lines are one result of biotechnology research and the ability to better deal with a variety of pests which negatively impact productivity is another.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	0	0	0
2008	0	0	0	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	5

Patents listed

1. Integrated Dual Site-Specific Recombination System.
2. Composite Polymeric Materials from Renewable Resources.
3. Signature Genes of Human Monocytes for FeverFew Extracts.
4. Bioactivities of Gossypol, 6-Methoxy Gossypol and 6, 6' Dimethoxy Gossypol
5. Methods of Inhibiting Multiple Cytochrome P450.

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	10	
2008	0	22	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Disclosures

Year	Target	Actual
2008	3	8

Output #2

Output Measure

- Licenses

Year	Target	Actual
2008	1	1

Output #3

Output Measure

- New products, processes procedures and policies
Not reporting on this Output for this Annual Report

Output #4

Output Measure

- National media placements
Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Percentage increase of funds through grants, contracts and gifts
Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Development of expanded applications of legumes in nitrogen poor environments
2	Improved profitability for beef and dairy producers

Outcome #1

1. Outcome Measures

Development of expanded applications of legumes in nitrogen poor environments

Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Improved profitability for beef and dairy producers

Not reporting on this Outcome for this Annual Report

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

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Comparisons between program participants (individuals, group, organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

Key Items of Evaluation

Program #6

V(A). Planned Program (Summary)

1. Name of the Planned Program

Food Safety and Nutrition

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
503	Quality Maintenance in Storing and Marketing Food Products	5%	5%	5%	5%
703	Nutrition Education and Behavior	30%	30%	30%	30%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	30%	30%	30%	30%
723	Hazards to Human Health and Safety	30%	30%	30%	30%
724	Healthy Lifestyle	5%	5%	5%	5%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	26.0	12.0	3.0	3.0
Actual	33.1	12.0	1073.0	3.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
359423	168277	211492	200984
1862 Matching	1890 Matching	1862 Matching	1890 Matching
359423	168277	198930	200984
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1525699	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Rendered poultry co-products are high in bacterial populations and the quality and safety of the resulting products depend on the inactivation of bacteria present in the raw material. Researchers continue to work to determine optimum approaches to address this situation which is an economic burden to the poultry industry and health risk to consumers.

Researchers are working to identify approaches to reduce harmful microbes in the food supply. In addition, work continues to examine the role of food in rural tourism marketing, product development and supply chain management. The outcome of this research has the potential to benefit small business in rural communities.

A major focus of Clemson University's Food Safety and Nutrition Program is on food safety education. 812 managers/ supervisors/ food handlers representing 397 different food establishments participated in a 10-hour certification course in food handling; 709 passed an exam to receive a certificate. An additional 308 food handlers were trained by those managers and supervisors. An estimated 156,344 people were served in the food establishments where those trained food handlers were employed. Educators conducted 133 educational work-shops and activities in the area of food safety, reaching 1,990 individuals. Of this number, 1877 reported an increase in knowledge and 721 reported using the practices learned through participation in the programs. Educators reached 1,841,171 consumers with food safety messages through indirect media contacts such as fairs, newspaper articles, television, radio, and web sites. New or value-added food products or packages (21) entered the market as a result of the program.

The second major focus of Clemson University's Food Safety and Nutrition Program is on nutrition education to improve quality of life and prevent childhood obesity. Food Safety and Nutrition Educators conducted 308 educational programs for the general public reaching 5234 adults. Of the adults participating in the educational programs, 4922 reported increased knowledge and 1681 reported that they had used practices learned. Educators reached 11,757,787 people with educational programs through the media. Media press kits (403) were distributed to media channels throughout the state. Print media was one outlet, with 13,713 column inches of information appearing in newspapers and other publications. In addition, educators provided 1034 minutes of radio airtime and 801 minutes of television airtime in the area of food safety and nutrition.

EFNEP Nutrition Educator Assistants (NEAs) conducted 2,293 educational programs in nutrition and health reaching 9,083 adults; 6,772 of these reported gaining knowledge, and 4,315 reported using a recommended practice learned through participation in the program. Volunteers assist in group teaching, making arrangements for meeting sites, helping during group teaching, and participating in advisory committees. There were 1,659 hours of volunteer time contributed to EFNEP by 919 volunteers. In EFNEP, families are taught individually or in small groups by EFNEP Nutrition Education Assistants (NEAs). There are twenty-two EFNEP NEAs (19.5 FTEs) covering 19 counties. NEAs work with adults (8.8 FTEs) and with children and youth (10.7 FTEs). Four EFNEP Area Coordinators lead the program in the counties. Culturally compatible programs for Latinos have been developed and pilot tested by graduate students in the Department of Food Science and Human Nutrition.

2. Brief description of the target audience

Community leaders, agencies, policy makers, general public, EFNEP - limited resource families, food service managers, supervisors, food handlers, producers, commercial food handlers, processing and packaging industry, entrepreneurs seeking to start food businesses or improve existing food business, media and other marketing contacts, and publication outlets – doctors' offices and grocers.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	37700	1700	10300	4100
2008	62154	1011674	11246	35276

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

Patent Applications Submitted

Year Target
Plan: 0

2008 : 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	8	
2008	23	5	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Licenses

Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Disclosures

Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Publications

Not reporting on this Output for this Annual Report

Output #4

Output Measure

- New products, processes, procedures and policies

Not reporting on this Output for this Annual Report

Output #5

Output Measure

- National media placements

Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Percent increase of outside funds through grants, contracts and gifts

Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Number of participants entering the EFNEP program including foods from all five food groups.

Year	Target	Actual
2008	150	1841

Output #8

Output Measure

- Number of press kits distributed

Year	Target	Actual
2008	35	403

Output #9

Output Measure

- Number of educational workshops conducted

Year	Target	Actual
2008	1525	6473

Output #10

Output Measure

- Number of people completing educational workshops

Year	Target	Actual
2008	14500	64858

Output #11

Output Measure

- Reducing environmental pollutants to improve health and well-being

Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of participants leaving the EFNEP program including foods from all five food groups
2	Number of people demonstrating skills learned in healthy food preparation.
3	Number of participants reporting increase knowledge in safe food handling and nutrition
4	Number of managers/supervisors/food handlers completing educational program and receiving a course certificate
5	Number of coalitions formed (partners, public/private, academic)
6	Number of food establishments represented by food handlers.
7	Number of people served in the food establishments represented by trained food handlers
8	Number of participants reached with food safety information by volunteers who participated in an Extension training program
9	Number of facilities meeting HACCP standards for food safety
10	Number of new or improved food products entering the market as a result of adopting recommended practices
11	Number of outlets distributing or selling Extension food safety and nutrition developed-resources
12	Number of people reached through media outlets that utilize Extension food safety, food biotechnology and nutrition resources
13	Reducing environmental pollutants to improve health and well-being
14	Identifying healthy eating lifestyles
15	Examining historical patterns of U. S. Nutrition Policies

Outcome #1

1. Outcome Measures

Number of participants leaving the EFNEP program including foods from all five food groups

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	1650	1804

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

South Carolina is the 5th fattest state in the nation. Overweight and obesity and the associated risk factors of unhealthy eating and inadequate amounts of physical activity increase the risk for developing other chronic conditions and diseases, such as diabetes, cardiovascular disease, certain cancers, arthritis, sleep apnea, and depression. The total cost of obesity in the United States was \$117 billion in 2000. Obesity-attributable medical costs for South Carolina alone reached over one billion dollars in 2003.

What has been done

Some 2,293 EFNEP programs were conducted targeting adults. Pre-program surveys indicated that 6% of participating adults reported diets containing foods from all five food groups. Based on post-program surveys, the percentage reported increased to 33%. A positive change in at least one food group was noted in 97% of participants graduating from the program.

Results

Results from a survey taken at the beginning and at the end of the program show that 98% of participants showed improvement in one or more nutrition practices (i.e., planning meals, making healthy food choices, preparing meals without adding salt, reading nutrition labels, or having children eat breakfast); 94% of participants showed improvement in one or more food resource management practices (i.e., planning meals, comparing prices, using grocery lists, or not running out of food); and 79% of participants showed improvement in one or more food safety practices .

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
703	Nutrition Education and Behavior

Outcome #2

1. Outcome Measures

Number of people demonstrating skills learned in healthy food preparation.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	11000	26933

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

South Carolina is the 5th fattest state in the nation. Overweight and obesity and the associated risk factors of unhealthy eating and inadequate amounts of physical activity increase the risk for developing other chronic conditions and diseases, such as diabetes, cardiovascular disease, certain cancers, arthritis, sleep apnea, and depression. The total cost of obesity in the United States was \$117 billion in 2000. Obesity-attributable medical costs for South Carolina alone reached over one billion dollars in 2003.

What has been done

Some 6,473 educational sessions were conducted such as Body and Soul Healthy Eating sessions, Building Healthy Habits for a Lifetime Course, nutrition education and behavior, hazards to human health and safety as well as health fairs to teach healthy food preparation.

Results

Over 78% of the program participants gained knowledge and 26,933 people demonstrated skills learned in healthy food preparation.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
703	Nutrition Education and Behavior
723	Hazards to Human Health and Safety

Outcome #3

1. Outcome Measures

Number of participants reporting increase knowledge in safe food handling and nutrition

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	10000	49764

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a need for clientele to practice improved dietary practices that will enable them to live healthy lifestyles.

What has been done

Some 6,473 educational sessions were conducted.

Results

Approximately 49,225 (76%) of the 64,851 people participating gained knowledge.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
503	Quality Maintenance in Storing and Marketing Food Products
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
723	Hazards to Human Health and Safety
703	Nutrition Education and Behavior

Outcome #4

1. Outcome Measures

Number of managers/supervisors/food handlers completing educational program and receiving a course certificate

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	550	726

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The National Restaurant Association has estimated that the average cost of a foodborne illness outbreak to an establishment is about \$75,000.

What has been done

In an effort to reduce these risks, agents conducted food safety training for 814 managers, supervisors, and other food handlers. These food handlers had the potential of reaching 166,844 people. Food handlers, managers and supervisors were trained and increased knowledge and skills in safe food handling techniques to reduce the incidence of food-borne illness, which reduces the likelihood of medical costs that are incurred due to food-borne illness.

Results

A total of 726 received a course completion certificate, representing 398 food establishments. The approximate economic value of the trainings in South Carolina was \$29,776,275.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
703	Nutrition Education and Behavior
723	Hazards to Human Health and Safety

Outcome #5

1. Outcome Measures

Number of coalitions formed (partners, public/private, academic)

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	95	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a need for clientele to practice improved dietary practices that will enable them to live healthy lifestyles.

What has been done

Agents met with various groups to establish networks and coalitions whereby educational sessions could be implemented and evaluated.

Results

New coalitions have been formed with the Richland County Community in Crisis, West Columbia Library, Activate Berkeley, USC-Union, SC Cancer Alliance, Kershaw County First Steps, Bamberg County Hospital and Nursing Center and Mt. Pisgah Baptist Church to deliver programs to over 400 people. More churches are interested in the program. Therefore, coalitions will increase with area churches.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety
703	Nutrition Education and Behavior

Outcome #6

1. Outcome Measures

Number of food establishments represented by food handlers.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	150	399

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The National Restaurant Association has estimated that the average cost of a food-borne illness outbreak to an establishment is about \$75,000. Food handlers, managers and supervisors need to be trained in safe food handling techniques to reduce the incidence of food-borne illness, which reduces the likelihood of medical costs that are incurred due to food-borne illness.

What has been done

A total of 726 food handlers participated in ServSafe educational courses and received a course completion certificate.

Results

The food handlers represented 399 food establishments and had the potential of reaching 166,844 people.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety
703	Nutrition Education and Behavior
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #7

1. Outcome Measures

Number of people served in the food establishments represented by trained food handlers

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	1200	156355

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The National Restaurant Association has estimated that the average cost of a food-borne illness outbreak to an establishment is about \$75,000. Food handlers, managers and supervisors will be certified to train in safe food handling techniques to reduce the likelihood of medical costs that are incurred due to food-borne illness.

What has been done

A total of 726 food handlers participated in ServSafe educational courses and received a course completion certificate.

Results

The food handlers represented 399 food establishments and had the potential of reaching 166,844 people.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
723	Hazards to Human Health and Safety
703	Nutrition Education and Behavior

Outcome #8

1. Outcome Measures

Number of participants reached with food safety information by volunteers who participated in an Extension training program

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	165	2094

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a need for clientele to adopt improved dietary practices that will enable them to live healthy lifestyles. Volunteers can help extend Extension's outreach.

What has been done

Lexington Leadership Class and FCL volunteers assisted in delivering educational programs. Volunteers also assisted in the foods area with state fair judging.

Results

Volunteers reached 1,443 people with Extension food safety information. Volunteers contributed over 169 hours to Food Safety Education. (Approximate value of time totals \$2,500)

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
503	Quality Maintenance in Storing and Marketing Food Products
723	Hazards to Human Health and Safety

Outcome #9

1. Outcome Measures

Number of facilities meeting HACCP standards for food safety

Not reporting on this Outcome for this Annual Report

Outcome #10

1. Outcome Measures

Number of new or improved food products entering the market as a result of adopting recommended practices

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	35	21

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Consumers want to make healthy food choices and need high quality supplies of food and fiber products.

What has been done

Food analysis assistance was given to companies to comply with food laws and regulations.

Results

Twenty-one improved food products entered the market as a result of adopting recommended practices.

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products

Outcome #11

1. Outcome Measures

Number of outlets distributing or selling Extension food safety and nutrition developed-resources

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	15	18

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Participants need to make healthy food choices, develop skills in the procurement of food for good health, and demonstrate skills in healthy food preparation.

What has been done

Agents and specialists developed and marketed food safety and nutrition educational material.

Results

Eighteen outlets distributed or sold Extension food safety and nutrition resources.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety
703	Nutrition Education and Behavior

Outcome #12

1. Outcome Measures

Number of people reached through media outlets that utilize Extension food safety, food biotechnology and nutrition resources

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	35000	13623958

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Participants need to make healthy food choices, develop skills in the procurement of food for good health, and demonstrate skills in healthy food preparation.

What has been done

Agents wrote monthly local and statewide articles for newspapers and magazines, conducted programs over educational TV and radio, and other media outlets.

Results

Over 13 million people were reached through media.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
724	Healthy Lifestyle
703	Nutrition Education and Behavior
723	Hazards to Human Health and Safety
503	Quality Maintenance in Storing and Marketing Food Products

Outcome #13

1. Outcome Measures

Reducing environmental pollutants to improve health and well-being

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The research addresses the realization of health and well being of South Carolina citizens by considerably reducing the possible environmental pollutants caused by candles made from petroleum-base. Certain brands of candles may cause skin irritation as well as exposure to smoke which causes illnesses. Soybeans are a renewable and biodegradable resource.

What has been done

Two categories of candles have been tested to determine whether any type candles produce unwanted hazardous products for human health during burning. A specially made chamber was developed.

Results

Research is continuing.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety
724	Healthy Lifestyle

Outcome #14

1. Outcome Measures

Identifying healthy eating lifestyles

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

African Americans account for approximately 72.3% of the overweight or obese population. The research is designed to empower limited-resource individuals to be responsible for their own health to reduce such health risks as diabetes and other illnesses.

What has been done

50 participants were selected to participate in the research. 25 in the experimental/treatment group and 25 in the comparison group. The researchers have been following the participant group since 6rd - 8th grades. The students are now in 10th - 11th grades.

Results

Research is continuing.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety
724	Healthy Lifestyle
703	Nutrition Education and Behavior

Outcome #15

1. Outcome Measures

Examining historical patterns of U. S. Nutrition Policies

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The policymakers at the state and national levels will care about the research. At present, they are intensely concerned to ascertain the sources and reasons for the discrepancy between governmental nutrition guidelines and population dietary and exercise behaviors and how to bridge the widening gap.

What has been done

The nature of the nutrition debate in South Carolina from antebelum times to World War I have been examined. More than 36,000 articles on nutrition and related subjects have been recorded on microfilm. For coding and cross-referencing, a systematic qualitative analysis of data on NVIVO is being used.

Results

Research is continuing.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety
703	Nutrition Education and Behavior
724	Healthy Lifestyle

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy

Brief Explanation

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

1. Evaluation Studies Planned

- Before-After (before and after program)

Evaluation Results

Pre-program surveys indicated that 6% of participating EFNEP adults reported diets containing foods from all five food groups. Based on post-program surveys, the percentage reported increased to 33%. Results from a survey taken at the beginning and at the end of the program show that 98% of participants showed improvement in one or more nutrition practices (i.e., planning meals, making healthy food choices, preparing meals without adding salt, reading nutrition labels, or having children eat breakfast); 94% of participants showed improvement in one or more food resource management practices (i.e., planning meals, comparing prices, using grocery lists, or not running out of food); and 79% of participants showed improvement in one or more food safety practices .

Key Items of Evaluation

Program #7

V(A). Planned Program (Summary)

1. Name of the Planned Program

Community, Leadership, and Economic Development

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	15%	15%	15%	15%
609	Economic Theory and Methods	10%	10%	10%	10%
610	Domestic Policy Analysis	15%	15%	15%	15%
801	Individual and Family Resource Management	15%	15%	15%	15%
802	Human Development and Family Well-Being	15%	15%	15%	15%
803	Sociological and Technological Change Affecting Individuals, Families and Communities	15%	15%	15%	15%
806	Youth Development	15%	15%	15%	15%
Total		100%	100%	100%	100%

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	14.0	6.0	5.3	8.0
Actual	16.2	9.0	5.0	5.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
637952	290660	342235	347153
1862 Matching	1890 Matching	1862 Matching	1890 Matching
637952	290660	423017	347153
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research continues to understand the nature of change in rural areas and how this change impacts markets, governance and the overall quality of life. Entrepreneurship and community-based economic development are being evaluated as options in lieu of the more traditional focus on industrial recruitment and expansion in rural communities.

Broadband access is often considered critical for growth in rural areas, and researchers continue to examine the conditions under which public sector investment in broadband access is more or less likely to produce return on investment. Faculty continue to examine the concept of agricultural tourism or agri-tourism as a diversification strategy in rural South Carolina.

The Community Leadership and Economic Development program conducted leadership and board member development training and continues to offer organizational capacity building to individuals and groups. The program also provided leadership in cultural and environmental stewardship. The AmeriCorps Grant has helped to expand the "Builders of Tomorrow" program, a youth leadership and dropout prevention program designed to improve academic achievement and high school graduation rates. AmeriCorps members tutored more than 300 students. According to the schools' computerized record keeping systems, 88% of the students' grades improved; MAP test scores in math and reading improved. Teachers also reported that classroom behaviors of the tutored students improved as well. The 20 AmeriCorps members earned a living allowance and the opportunity to earn an Education Award to attend college.

The National Issues Forums have created platforms for discussing strategies to address issues related to alcohol abuse and the 21st Century School project in Colleton County. Issue mapping was used in 13 Southern states to ascertain the youth and adult voice on Youth Engagement. The Women's Connection initiative was organized to provide participants with knowledge and experience of the political process, along with networking opportunities for those who would consider serving our state in a political forum. Grant writing workshops were conducted in rural communities.

Homeownership opportunities were offered to low-to-moderate income families of the Northeastern Corridor of Orangeburg CDC. Workshops and trainings were provided, such as the six homebuyer education classes. The NCO CDC continue to seek creative ways to provide underserved citizens with decent and affordable housing, whether rental or homeownership. Also, 1890 Extension is working diligently with funders and constituents to revitalize the neighborhoods in the targeted service area.

2. Brief description of the target audience

Students, child care providers, limited-resource persons, community leaders, board/council members, nonprofit organization boards and groups, adults, youth, business and workforce preparation agencies and disadvantaged citizens and communities, state, federal, and local agency personnel, association members, citizens faced with public issues, and citizens engaged in economic and tourism development.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	23600	2400	800	200
2008	14577	1154827	515	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	6	
2008	0	8	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Disclosures

Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Licenses

Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Publications, business plans and housing grants

Year	Target	Actual
2008	15	6

Output #4

Output Measure

- New Products, processes, procedures and policies

Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Percent Increase of Outside funds from grants, contracts and gifts

Not reporting on this Output for this Annual Report

Output #6

Output Measure

- National Media Placements

Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Number of CYFAR-related youth participants in academic enhancement activities

Not reporting on this Output for this Annual Report

Output #8

Output Measure

- Number of CYFAR-related youth and adult participants in Leadership Development training

Not reporting on this Output for this Annual Report

Output #9

Output Measure

- Number of CYFAR-related youth and adult participants in entrepreneurship training and/or activities

Not reporting on this Output for this Annual Report

Output #10

Output Measure

- Number of educational workshops conducted

Year	Target	Actual
2008	810	511

Output #11

Output Measure

- Total number of people completing educational workshops

Year	Target	Actual
2008	12500	15060

Output #12

Output Measure

- Number of board members trained

Year	Target	Actual
2008	220	526

Output #13

Output Measure

- Number of youth and adult participants in CYFAR-related community visioning and strategic planning activities

Not reporting on this Output for this Annual Report

Output #14

Output Measure

- Number of homebuyer education classes completed

Year	Target	Actual
2008	{No Data Entered}	6

Output #15

Output Measure

- Number of homeownership loans made through the CDC

Year	Target	Actual
2008	{No Data Entered}	11

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Total number of people reporting increased knowledge as a result of participation in CLED activities
2	Number of nonprofit organization members who increase knowledge about effective operations of boards and organizations
3	Number of individuals completing leadership programs who collaborate with others in the region to address an issue or concern
4	Number of facilitated public meetings addressing public issues
5	Number of public appearances used to promote understanding of public issues
6	Number of printed materials used to promote understanding of public issues
7	Number of National Issues Forums convened or moderated
8	Number of groups or agencies that collaborate or partner on a task group
9	Number of community improvement programs conducted
10	Number of participants engaged in community promotion projects
11	Number of youth and adult CYFAR-participants who increase knowledge and skills in community visioning and strategic planning activities
12	Number of youth and adult CYFAR participants who practice skills Intergenerational Service-Learning or Community Development Projects
13	Number of CYFAR-related youth and adult participants who gain skills in Leadership Development training
14	Number of CYFAR-related youth and adult participating in deliberative dialogue forums or activities
15	Number of CYFAR-related youth participants who learn entrepreneur concepts and/or practice entrepreneur skills
16	Number of youth participants who improve academic performance as a result of participating in CYFAR-related activities
17	Number of homeownership loans made through the CDC.
18	Reducing the number of substandard and/or unaffordable housing.

Outcome #1

1. Outcome Measures

Total number of people reporting increased knowledge as a result of participation in CLED activities

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	7900	13570

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a need to assist in building local economies through the development of local leadership.

What has been done

A total of 14,300 people participated in 482 programs. Over 526 board members were trained. Board training for public officials and nonprofit organizations were offered at the community and state-wide level in the areas of community leadership development training, team building, and consensus development activities.

Results

Of those participating, 96% (13,570) gained knowledge. Some 54 community leaders who completed Leadership South Carolina and are serving on at least one community organization. Five of these leaders completing the program in the last three years have run for public office and succeeded in winning seats on city council, county council, or school board. Two are vying for seats on the SC House of Representatives.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families and Communities
608	Community Resource Planning and Development
806	Youth Development

Outcome #2

1. Outcome Measures

Number of nonprofit organization members who increase knowledge about effective operations of boards and organizations

Not reporting on this Outcome for this Annual Report

Outcome #3

1. Outcome Measures

Number of individuals completing leadership programs who collaborate with others in the region to address an issue or concern

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	350	924

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

South Carolina women need opportunities to learn why and how to become involved in public service so that they may be more motivated and confident to do so.

What has been done

Two 'Women Making a Difference' programs and a legislative day was held to broaden the civic knowledge of women through visits with legislators-past and present- and other elected officials. The legislative day event provided knowledge and experience of the political process, along with networking opportunities for those who would consider serving our state in a political forum. Participants learned about how women are contributing to our communities, state and nation through public service.

Results

Some 165 women were educated about the plight of women in Afghanistan and 125 women were educated about the status of women's leadership roles globally as well as the roles they can play and strategies to help bridge the gap for future leaders. Sixteen high school and two elementary school students learned from state and national women leaders that anyone has leadership potential and can make a difference in the world. Professional connections were made that will enhance participants' professional and personal development and make them more effective employees. Ultimately, participants will be motivated to make a difference in their communities and their state. Over 924 people completed leadership projects collaborating with others in the region to address an issue.

4. Associated Knowledge Areas

KA Code	Knowledge Area
610	Domestic Policy Analysis
806	Youth Development
608	Community Resource Planning and Development
609	Economic Theory and Methods
803	Sociological and Technological Change Affecting Individuals, Families and Communities
802	Human Development and Family Well-Being

Outcome #4

1. Outcome Measures

Number of facilitated public meetings addressing public issues

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	12	18

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Citizens need to be able to understand public issues and learn methods for addressing concerns in a productive manner in order to promote unified public policy.

What has been done

The community leadership program provides a facilitated and constructive forum where conflicting interests and policies can be addressed through the action plans of established and emerging leaders. These programs also help create the next generation of informed leaders.

Results

There were 18 facilitated meetings addressing public issues and three National Issues Forums (NIF) convened or moderated. Eight public appearances were used to promote an understanding of public issues like land use and transportation planning, financial and health security in order to have a citizen's voice prior to the SC primaries. The NIFs have created platforms for discussing strategies to address issues related to alcohol abuse and the 21st Century School project in Colleton County. Issue mapping was used in 13 Southern states to ascertain the youth and adult voice on Youth Engagement.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families and Communities
806	Youth Development

Outcome #5

1. Outcome Measures

Number of public appearances used to promote understanding of public issues

Not reporting on this Outcome for this Annual Report

Outcome #6

1. Outcome Measures

Number of printed materials used to promote understanding of public issues

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	32	109

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Citizens need to be able to understand public issues and learn methods for addressing concerns in a productive manner in order to promote unified public policy.

What has been done

Public Issues Management School trains participants to become certified facilitators using facilitation, negotiation, and mediation conflict resolution strategies. There were eight public appearances reaching some 395 people to promote understanding of public issues and some 109 printed materials were used.

Results

Participants learned skills to promote effective comprehensive planning, issue management and alternative dispute resolution techniques.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
806	Youth Development
803	Sociological and Technological Change Affecting Individuals, Families and Communities

Outcome #7

1. Outcome Measures

Number of National Issues Forums convened or moderated

Not reporting on this Outcome for this Annual Report

Outcome #8

1. Outcome Measures

Number of groups or agencies that collaborate or partner on a task group

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	350	192

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a need to assist in building local economies. The CLED program promotes engagement in community enhancement and improvement that is linked to sustainable economic development and improved quality of life.

What has been done

The Innovation Center (IC) was created and funded through a \$150,000 USDA Rural Development grant to facilitate the creation of jobs in targeted rural areas of South Carolina. Grant writing workshops were conducted in rural communities.

Results

The Institute provided assistance to 115 organizations. In addition, the Pendleton Farmers Market committee explored opportunities to improve the market. A nominal fee was initiated - \$3.00 per market session or \$10.00 per four weeks. Vendor applications increased 57 percent from previous year. Average daily vendors increased 59 percent from previous year. Average weekly vendor sales were \$143 with a high of \$400. 40 market bags were sold. Eight (8) vendors participated in Harvest Festival. Income from the vendor fees was \$1238.00.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
806	Youth Development
803	Sociological and Technological Change Affecting Individuals, Families and Communities

Outcome #9

1. Outcome Measures

Number of community improvement programs conducted

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	45	12

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a need to assist in building local economies. The CLED program promotes engagement in community enhancement and improvement that is linked to sustainable economic development and improved quality of life.

What has been done

CES continues to work through an AmeriCorps Grant to expand the 'Builders of Tomorrow' program, a youth leadership and dropout prevention program designed to improve academic achievement and high school graduation rates. This year, 500 students completed 15 hours of youth leadership training in Colleton, Allendale, Dorchester and Hampton Counties.

Results

Year end evaluations by teachers and school administrators indicated that 75% of the students' grades improved and 78% of the students' classroom behaviors improved. AmeriCorps members tutored more than 300 students, according to the schools' computerized record keeping systems, 88% of the students' grades improved; MAP test scores in math and reading improved. Teachers also reported that classroom behaviors of the tutored students improved. The 20 AmeriCorps members earned a living allowance and the opportunity to earn an Education Award to attend college.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families and Communities
608	Community Resource Planning and Development
806	Youth Development

Outcome #10

1. Outcome Measures

Number of participants engaged in community promotion projects

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	420	102

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

FACETS is a studio/workshop institute concept designed to provide instruction, professional development, and leadership opportunities in the visual and performing arts for constituencies for Orangeburg County and surrounding areas. The program promotes cultural and social awareness through the arts.

What has been done

The FACETS Arts program involved adults and youth in artistic intergenerational activities, conducted a summer Drawing Institute for youth at risk, and collaborated on a program with the Orangeburg-Calhoun Technical College about arts in technology program. In collaboration with SC Dept of Ed, a Drawing Institute was conducted for public school art teachers.

Results

Participants completed art works, increased critical thinking and writing skills, and developed strategies for converting studio experience into educational practice.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families and Communities
806	Youth Development
608	Community Resource Planning and Development
802	Human Development and Family Well-Being

Outcome #11

1. Outcome Measures

Number of youth and adult CYFAR-participants who increase knowledge and skills in community visioning and strategic planning activities
Not reporting on this Outcome for this Annual Report

Outcome #12

1. Outcome Measures

Number of youth and adult CYFAR participants who practice skills Intergenerational Service-Learning or Community Development Projects
Not reporting on this Outcome for this Annual Report

Outcome #13

1. Outcome Measures

Number of CYFAR-related youth and adult participants who gain skills in Leadership Development training
Not reporting on this Outcome for this Annual Report

Outcome #14

1. Outcome Measures

Number of CYFAR-related youth and adult participating in deliberative dialogue forums or activities
Not reporting on this Outcome for this Annual Report

Outcome #15

1. Outcome Measures

Number of CYFAR-related youth participants who learn entrepreneur concepts and/or practice entrepreneur skills

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	165	225

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

High school seniors care because they are given an opportunity to learn about the rewards of business ownership through the Entrepreneurship Expo Program. The program teaches young people about the principles of entrepreneurship through workshops, competitions and rewards.

What has been done

A one day workshop consisting of multiple sessions was held. Participants learned about developing business ideas, writing a business plan and operating a business. Student teams from 17 high schools around the state entered into the Entrepreneurship Expo Business Plan Competition at South Carolina State University.

Results

The Expo provided a forum for nearly 225 budding entrepreneurs to gain a better understanding of business ownership and financial management. Students learned how to craft business ideas, write a business plan, market a business and manage a company. Student teams from across the state vied for awards in a business plan competition. The Expo, also, featured on-the-spot admissions and scholarship fairs for students. Mullins High School (Marion Co.), won 1st place in the competition with the plan to open 'Cookie Critters, LLC', a bakery and coffee retail establishment.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development
803	Sociological and Technological Change Affecting Individuals, Families and Communities
801	Individual and Family Resource Management

Outcome #16

1. Outcome Measures

Number of youth participants who improve academic performance as a result of participating in CYFAR-related activities

Not reporting on this Outcome for this Annual Report

Outcome #17

1. Outcome Measures

Number of homeownership loans made through the CDC.

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	11

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The citizens of South Carolina care about families being able to afford decent housing. Potential applicants are experiencing difficulties in acquiring tolerable mortgages from reputable sources to obtain a home. Credit scores previously deemed high enough to obtain decent mortgages are no longer considered acceptable.

What has been done

Six homebuyer education classes were offered. Applicants completed and submitted paperwork to receive assistance.

Results

The Northeastern Corridor of Orangeburg CDC provided 'The American Dream' of homeownership opportunity to 11 low-to-moderate income families. Six families received a forgivable loan of \$18,000 and 5 families received over \$8,700.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families and Communities
802	Human Development and Family Well-Being

Outcome #18

1. Outcome Measures

Reducing the number of substandard and/or unaffordable housing.

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	14

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Citizens of Orangeburg County as well as individuals across the state of South Carolina are concerned about substandard housing. It is important to improve the living and economic conditions for residents to create decent, affordable, safe and sanitary housing.

What has been done

The Northeastern Corridor of Orangeburg CDC has a neighborhood revitalization program. Assessed needed repairs in the project activity area and prepared work specification write-ups. Submitted home repair applications to South Carolina Housing Authority and the Federal Home Loan Bank of Atlanta. Selected income eligible families and prioritized to receive home rehabilitation services. Engaged contractors to conduct rehabilitative repairs.

Results

The Northeastern Corridor of Orangeburg CDC (NCO CDC) acquired and demolished 14 dilapidated and vacant properties. Six houses were constructed on six of the cleared sites. Ten owner-occupied housing units were rehabilitated. Thereby, restoring life to slum and blighted areas. The County of Orangeburg committed to provide demolition and debris disposal as in-kind services to the NCO CDC, at no cost to the agency or the university.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families and Communities
801	Individual and Family Resource Management

608 Community Resource Planning and Development
802 Human Development and Family Well-Being

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy

Brief Explanation

ThePendleton Farmers Market committee explored opportunities to improve the market.A nominal fee was initiated - \$3.00 per market session or \$10.00 per four weeks. Vendor applications increased 57 percent from previous year. Average daily vendors increased 59 percent.

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

1. Evaluation Studies Planned

- After Only (post program)
- Before-After (before and after program)

Evaluation Results

Of the 14,300 people participating in programs, 96% (13,570) gained knowledge. Vendor applications increased 57 percent from previous year. Average daily vendors increased 59 percent from previous year. Average weekly vendor sales were \$143 with a high of \$400.

Year end evaluations by teachers and school administrators indicated that 75% of the students' grades improved and 78% of the students' classroom behaviors improved due toAmeriCorps tutoring activities. According to the schools' computerized record keeping systems, 88% of the students' grades improved; MAP test scores in math and reading improved.Teachers also reported that classroom behaviors of the tutored students improved.

Key Items of Evaluation

Program #8

V(A). Planned Program (Summary)

1. Name of the Planned Program

Integrated Pest Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
211	Insects, Mites, and Other Arthropods Affecting Plants	50%	50%	50%	50%
216	Integrated Pest Management Systems	50%	50%	50%	50%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	3.0	1.0
Actual	2.2	0.0	2.6	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
8295	0	349768	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
8295	0	390345	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
212088	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research is continuing to obtain pest management tools for high value specialty crop growers in South Carolina. Specific initiatives include obtaining the regulatory clearance of crop protection chemicals for high value specialty crops and minor uses on major crops with special emphasis on reduced-risk chemicals. Researchers are examining the effectiveness of transgenic cotton on target insect pests and research methods for managing non-target insects with elevated pest status. This includes research into treatment thresholds, insecticide resistance, and sampling methods.

Through ongoing research, the behavior and management of structure infesting black carpenter ants and subterranean termites will be better understood, allowing for improved control programs that target these pest species. Researchers are working to discover and develop safe and economical methods to control honey bee pests in an integrated management approach.

With increased global travel and the threat of bioterrorism, the world faces growing concern over arthropod borne diseases. A multifaceted approach involving surveys, systematics, ecology, genetics, and natural enemies of arthropods of medical and veterinary importance is underway and offers the best approach to solving problems related to arthropod borne diseases.

In Extension, peach evaluations are being conducted and agents are monitoring stations across the upstate for peach brown rot problems. The Nursery and Landscape Management Guide has been revised and some 1,000 copies distributed. Training has been provided on insecticide application methods, identification of scale insects, new insecticides, and evaluation of insecticide efficacy. Specialists are conducting an evaluation of the resistance to Phytophthora root rot in bedding plants. The specialist conducted national Sudden Oak Death/Phytophthora ramorum stream survey in South Carolina.

2. Brief description of the target audience

Homeowners, businesses and producers of horticultural and agronomic crops

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	0	0	0
2008	1080	5574	0	0

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

Patent Applications Submitted

Year	Target
Plan:	1
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	0	
2008	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Disclosures

Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Licenses

Not reporting on this Output for this Annual Report

Output #3

Output Measure

- New Products, processes, procedures or policies

Not reporting on this Output for this Annual Report

Output #4

Output Measure

- National media placements

Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Percent increase of outside funds through grants, contracts and gifts

Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Increased knowledge of the evolution of resistance in pest species
2	Improved strategies for managing ants and other household pests

Outcome #1

1. Outcome Measures

Increased knowledge of the evolution of resistance in pest species

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	3	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Extension will increase the supply and dissemination of information and knowledge about IPM strategies and systems and increase the level of adoption of environmentally sound integrated pest management practices so that commodities, homes, and communities will be protected, resulting in abundant, high quality supplies of food and fiber products and improved quality of life. This measure will show economic impact of the peanut program in millions of dollars.

What has been done

The CE peanut variety evaluation determines which varieties growers choose even when less than optimal varieties are available. A conservative estimate shows that the program is increasing yield by 100 lb/ac (\$25/ac) on 40,000 acres annually, for increased grower returns of at least \$1 million per year.

Results

By allowing growers to choose the most effective disease management programs, CE has an additional impact of at least \$600,000 per year. By showing growers that adjuvants and certain types of foliar nutrients are unnecessary and even counter-productive, CE has conservatively, an impact of at least \$400,000 (\$10/ac x 40,000 ac). The CE Peanut program has a total economic impact of over \$3 million. By demonstrating yield response to following soil test guidelines, CE has an additional annual impact of at least \$400,000 (\$20/ac x 20,000 ac). By having research-based digging guidelines, CE has an impact of at least \$750,000 (100 lb/ac x \$0.25/lb x 30,000 ac).

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
216	Integrated Pest Management Systems

Outcome #2

1. Outcome Measures

Improved strategies for managing ants and other household pests

Not reporting on this Outcome for this Annual Report

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy

Brief Explanation

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

1. Evaluation Studies Planned

- Before-After (before and after program)

Evaluation Results

By demonstrating yield response to following soil test guidelines, CE has an additional annual impact of at least \$400,000 (\$20/ac x 20,000 ac). By having research-based digging guidelines, CE has an impact of at least \$750,000 (100 lb/ac x \$0.25/lb x 30,000 ac).

Key Items of Evaluation

Program #9

V(A). Planned Program (Summary)

1. Name of the Planned Program

4-H Youth Development and Families

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management	4%	4%	0%	4%
802	Human Development and Family Well-Being	15%	15%	0%	15%
803	Sociological and Technological Change Affecting Individuals, Families and Communities	10%	10%	0%	10%
806	Youth Development	71%	71%	0%	71%
	Total	100%	100%	0%	100%

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	30.0	15.0	0.0	3.0
Actual	41.0	15.0	0.0	3.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1281624	458936	0	548137
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1281624	458936	0	548137
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Approximately 89,910 people were reached through 4-H programs. This number represents repeated interactions with contacts during the year. A total of 987 adults were trained in 4-H project areas and, in turn, trained 17,472 youth. As a result, 808 youth developed workforce preparation skills, 416 developed hunter safety skills. 1,029 youth received officer training to strengthen leadership skills; 1,073 provided leadership to service learning projects for the community or to help others in their club. Volunteers contributed 11,482 hours. The value of time contributed was \$206,676. A total of 4,279 youth participated in service learning or community development projects. Youth were trained as ambassadors and youth gave 175 presentations about 4-H to other groups. 213 improved their communication skills through speaking and debating.

The South Carolina 4-H Hispanic Outreach is a major initiative in the plan. This initiative, through the leadership of our SC 4-H Hispanic Outreach Coordinator, has impressive momentum, reaching Latino youth and their families in growing numbers. It continues to be a pleasure to expose them to the wonders of 4-H while connecting them to the opportunities at Clemson University.

The documented value of service contributions of Family and Community Volunteers equaled over \$1.1 million. A total of 1,054 FCL volunteers conducted workshops, reaching over 4,818 persons.

The 1890 Extension Program provides lifelong learning opportunities, programs and services for community members which will assist in improving their quality of life. Courses such as Introduction to Keyboarding for Seniors (53 persons), Introduction to Keyboarding (35 persons), Basic Spanish Part 1 (62 persons), Basic Spanish Part II (39 persons), Introduction to Computes /Microsoft Word (24 persons), Introduction of PowerPoint (23 persons), Introduction to Excel (18 persons) and University Campus Tours (78 persons) are offered free of charge to the community.

2. Brief description of the target audience

- All youth between the ages of nine and nineteen
- All youth between the ages of five and eight
- Parents and other adults interested in the development of South Carolina youth
- 30-44 parent and young adult
- 45-64 Mature volunteer
- 65+ Grandparent and Senior Volunteer
- Adult learners (college students)
- Teachers

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	3050	0	70400	0
2008	66826	2253989	23084	65913

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

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	0	
2008	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of educational workshops conducted

Year	Target	Actual
2008	2600	3957

Output #2

Output Measure

- Total number of adult volunteers (including non-Extension staff) trained in club, school enrichment, and special interest program delivery and management in all 4-H project areas.

Year	Target	Actual
2008	320	506

Output #3

Output Measure

- Number of child development trainings held.

Year	Target	Actual
2008	{No Data Entered}	621

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of trained adult volunteers and staff, (including non-Extension staff) who teach subject matter and life skills to youth, meeting S.C. educational standards by utilizing National 4-H Cooperative Curriculum System (4-HCCS) curriculum materials as available
2	Number of 4-H youth, ages 9-19 reached by volunteers in 4-H projects
3	Number of youth, ages 5-8, who participate in (4-HCCS Exploring the Treasures of 4-H curriculum, and non-competitive) programs in order to sample the subject matter offered by Extension/4-H
4	Number of hours volunteers contribute to 4-H youth development programs
5	Number of 4-H clubs meeting standards of quality as indicated in "4-H Honor Club" standards during the current 4-H year
6	Number of youth submitting completed 4-H project record books this year in all 4-H project areas.
7	Number of youth who learn about the environment and develop life skills through a variety of Youth Camping opportunities
8	Number of military youth (children with a parent in the military) integrated into 4-H Camping (Day and Overnight) programs
9	Number of military youth (children with a parent in the military) integrated into 4-H Projects
10	Number of youth who gain knowledge in leadership and citizenship projects areas
11	Number of youth who provide leadership to service learning projects for the community and to improve themselves, and help others
12	Number of youth participating in service learning projects for the community and to improve themselves, and help others
13	Number of youth who set and achieve financial goals through regular savings
14	Number of youth who develop skills in workforce preparation through non-formal educational experiences
15	Number of youth who gain knowledge and skills about plants, livestock and/or pets.
16	Number of youth who develop hunter safety skills
17	Number of youth who develop knowledge and skills in science, engineering, and technology (including electricity, computers, pontoon classroom, etc.).
18	Number of school teachers/volunteers who implement Science Discovery Series curriculum in their classrooms
19	Number of youth completing Science Discovery Series activities
20	Number of youth gain knowledge in nutrition and fitness
21	Number of youth who make healthy food choices after participating in selected food and nutrition programs/projects
22	Number of youth who demonstrate their skills in food preparation after participating in selected food and nutrition programs/projects
23	Number of youth who gain knowledge in natural resources and shooting sports
24	Number of youth who develop good decision-making skills
25	Number of youth who develop and improve communication skills through speaking and debating
26	Number of child development trainings held.
27	Identifying existing social and educational services to Hispanics

Outcome #1

1. Outcome Measures

Number of trained adult volunteers and staff, (including non-Extension staff) who teach subject matter and life skills to youth, meeting S.C. educational standards by utilizing National 4-H Cooperative Curriculum System (4-HCCS) curriculum materials as available

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	2100	1113

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a need for an effective and sustained volunteer management system for 4-H Youth Development programs.

What has been done

This year 1113 new adults were trained and taught in 4-H project areas.

Results

Volunteers were equipped for leadership roles, have made positive impacts in their communities and trained youth with new knowledge and skills.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #2

1. Outcome Measures

Number of 4-H youth, ages 9-19 reached by volunteers in 4-H projects

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	54000	17472

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a need for an effective and sustained volunteer management system for 4-H Youth Development programs.

What has been done

Adult volunteers trained 17,472 youth in various 4-H projects.

Results

Youth reported that they felt the care and concern of adult volunteers who taught them and would likely continue the mentoring given by 4-H volunteers. The youth were eager to participate and learn based on the educational opportunities being offered.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development
801	Individual and Family Resource Management
802	Human Development and Family Well-Being

Outcome #3

1. Outcome Measures

Number of youth, ages 5-8, who participate in (4-HCCS Exploring the Treasures of 4-H curriculum, and non-competitive) programs in order to sample the subject matter offered by Extension/4-H

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	110	2510

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a need to offer 4-H projects and activities to youth at a younger age throughout the state. Young people learn and adapt new information better at an early age.

What has been done

Some 2,510 youth ages 5-8 participated in 4-H projects in order to sample the subject matter offered by Extension 4-H

Results

Youth demonstrated knowledge and skills learned in 4-H projects and activities. Over half of this number of youth continued in 4-H projects as they grew older.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #4

1. Outcome Measures

Number of hours volunteers contribute to 4-H youth development programs

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	4200	16482

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a need for an effective and sustained volunteer management system for 4-H Youth Development programs.

What has been done

Volunteers contributed over 16,482 hours of service to 4-H.

Results

The value of volunteer hours contributed was \$216,676.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development
801	Individual and Family Resource Management
802	Human Development and Family Well-Being

Outcome #5

1. Outcome Measures

Number of 4-H clubs meeting standards of quality as indicated in "4-H Honor Club" standards during the current 4-H year

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	15	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

All 4-H clubs should meet standards of quality as indicated in 4-H Honor Club.

What has been done

Training was provided for all new volunteer leaders about the 4-H Honor Club standards.

Results

Eight of the clubs met all standards of quality. 4-H Honor Club standards mean that clubs meet established criteria to offer a quality program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #6

1. Outcome Measures

Number of youth submitting completed 4-H project record books this year in all 4-H project areas.

Not reporting on this Outcome for this Annual Report

Outcome #7

1. Outcome Measures

Number of youth who learn about the environment and develop life skills through a variety of Youth Camping opportunities

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	1200	2550

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth should be exposed to positive experiences that help them develop physically, intellectually, and socially. They have opportunities for such development by participating in camping activities.

What has been done

The number of youth participating in the camping program and activities was 2,550. Children engaged in learn-by-doing life skill experiences during indoor and outdoor activities.

Results

Camping helped them develop new friendships, learn independence, and offered opportunities for physical development. Camping activities helped youth strengthen their reasoning skills by undertaking challenging tasks.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #8

1. Outcome Measures

Number of military youth (children with a parent in the military) integrated into 4-H Camping (Day and Overnight) programs

Not reporting on this Outcome for this Annual Report

Outcome #9

1. Outcome Measures

Number of military youth (children with a parent in the military) integrated into 4-H Projects

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	1100	2050

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

4-H youth development programs can assist families with parents in the military (National Guard and Reserve) through the Operation Military Kids program by exposing youth to positive educational, recreational, and social support experiences.

What has been done

Over 2,050 children of military families participated in 4-H activities to help them strengthen reasoning skills, develop new friendships, learn independence, and offer opportunities for physical development.

Results

Skills learned as a result of 4-H involvement are valued and can help youth to grow into positive, contributing members of society.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #10

1. Outcome Measures

Number of youth who gain knowledge in leadership and citizenship projects areas

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	1350	17901

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth have basic needs that include developing a sense that they are valuable, contributing members of their family and the community.

What has been done

A total of 683 programs were conducted in 4-H Leadership, Personal Development and Citizenship reaching over 21,000 youth. Over 1,400 youth received training to help them serve in club, county, regional state and national leadership roles.

Results

Two South Carolina 4-Hers and one SC 4-H alumni/2008 Clemson University graduate were selected among applicants from across the nation to serve in national level 4-H positions. As a member of the National 4-H Congress Design Team one SC 4-Her will work with extension educators, 4-H youth and 4-H adult volunteers analyze current youth issues and determine the most effective ways to address them. The 4-H Alumni was selected as a program assistant for the Wonders of Washington (WOW) with the National 4-H Council in Chevy Chase, Maryland. This unique opportunity will afford her the experiences of becoming a certified Washington, D.C., tour guide, facilitating the WOW program and teaching various workshops to 4-Hers. Another SC 4-H member will participate as a member of the National 4-H Conference Program Committee, which is composed of a team of youth and adult members who plan, implement and evaluate the National 4-H Conference.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #11

1. Outcome Measures

Number of youth who provide leadership to service learning projects for the community and to improve themselves, and help others
Not reporting on this Outcome for this Annual Report

Outcome #12

1. Outcome Measures

Number of youth participating in service learning projects for the community and to improve themselves, and help others

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	850	4279

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth have basic needs that include developing a sense that they are valuable contributing members of their family and the community.

What has been done

Over 1,000 youth provided leadership to service learning projects for the community and to improve themselves, and help others. A total of 4,279 youth participated in service learning projects such as Adopt-a-Highway, fundraising for animal shelters, and feed the hungry. Youth made 32 travel pillows for service men and women overseas.

Results

The youth demonstrated skills learned in decision-making and teamwork. Skills learned as a result of 4-H involvement are valued and can help youth to grow into positive, contributing members of society.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #13

1. Outcome Measures

Number of youth who set and achieve financial goals through regular savings

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	25	2005

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many young people are unskilled in managing their personal finances and need to make better decisions regarding how to manage money.

What has been done

Over 2000 youth participated in Resource Management for Youth programs, including High School Financial Management, Financial Fitness for Youth and Financial Champions.

Results

Of the number participating in resource management activities, over 86% increased knowledge and skills related to financial management and set and achieved at least one financial goal through regular savings.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
806	Youth Development

Outcome #14

1. Outcome Measures

Number of youth who develop skills in workforce preparation through non-formal educational experiences

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	45	1008

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth need knowledge in workforce preparation and opportunities to develop assests such as communication skills, organizational abilities, wise decision-making, independence, and self-confidence and should demonstrate caring.

What has been done

Over 1000 youth developed workforce preparation skills.

Results

Skills learned as a result of 4-H involvement are valued and can help youth to grow into positive, contributing members of society.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
806	Youth Development
801	Individual and Family Resource Management

Outcome #15

1. Outcome Measures

Number of youth who gain knowledge and skills about plants, livestock and/or pets.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	11000	26614

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth need opportunities to develop assets such as communication skills, organizational abilities, wise decision-making skills, independence, and self-confidence and should demonstrate caring. They have opportunities for such development by participating in the 4-H Plants and Animals project.

What has been done

4-H advancement programs consist of a series of steps that provide a framework for progressive learning and encourage 4-H members to learn at their own speed based on their interest and abilities. Youth participated in livestock, barrow, swine, dairy heifer, beef showmanship contests, gardening, poultry, goat and horse projects. Youth received a 20 hour training in first responder service work.

Results

Over 89% of the youth participating in programs gained knowledge and skills. The participation in plant and animal science programs has a positive influence on life skills development, engages the youth in learning by doing and gives them the opportunity for mastery. It trained youth to plan, reason and be useful, helpful, and skillful. Thirty youth are now able to provide immediate first aid, be able to conduct light search-and-rescue activities and communicate with professional first responders.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #16

1. Outcome Measures

Number of youth who develop hunter safety skills

Not reporting on this Outcome for this Annual Report

Outcome #17

1. Outcome Measures

Number of youth who develop knowledge and skills in science, engineering, and technology (including electricity, computers, pontoon classroom, etc.).

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	1250	5892

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Science and technology skills are needed if youth are to keep up with the rapidly changing society. The 4-H program in SC offer youth the opportunity to develop knowledge and skills in science, engineering, and technology.

What has been done

A total of 252 programs reached 6,232 youth. 3rd and 4th grade teachers were trained in 4-H science curricula. Some 369 youth of military parents were integrated into the program through the delivery of the Mobile Technology Lab. 1890 Extension provided, for 6 weeks, an opportunity to rising 7th and 8th graders to build their own computer and improve their reading and math skills using academic software.

Results

Over 93% (5,832) of the youth gained knowledge in GPS/GIS technology, photography, and 4-H2O Pontoon Classroom. 100% of the TechBridge youth gained knowledge. A total of 60 youth were given free computers at the end of the 6 week period.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #18

1. Outcome Measures

Number of school teachers/volunteers who implement Science Discovery Series curriculum in their classrooms

Not reporting on this Outcome for this Annual Report

Outcome #19

1. Outcome Measures

Number of youth completing Science Discovery Series activities

Not reporting on this Outcome for this Annual Report

Outcome #20

1. Outcome Measures

Number of youth gain knowledge in nutrition and fitness

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	7000	15653

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Gaining knowledge and skills in nutrition and fitness can help youth make decisions that will positively affect their lifestyles as they mature into adulthood.

What has been done

Some 496 Nutrition, Fitness, and Safety programs were conducted reaching 16,381 youth. Over 130 youth were tested for diabetes. Ten were found to have elevated blood sugar levels. Follow up was done with their parents. In addition, a 4-H International Foods Day Camp and My Pyramid classes were conducted. Agents trained Boys and Girls Club instructors in child safety.

Results

Of those participating in programs, 93% (15,083) gained knowledge and demonstrated skills learned. After follow up, over 2,115 youth continued to make healthy food choices after participating in food and nutrition programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
806	Youth Development

Outcome #21

1. Outcome Measures

Number of youth who make healthy food choices after participating in selected food and nutrition programs/projects
Not reporting on this Outcome for this Annual Report

Outcome #22

1. Outcome Measures

Number of youth who demonstrate their skills in food preparation after participating in selected food and nutrition programs/projects
Not reporting on this Outcome for this Annual Report

Outcome #23

1. Outcome Measures

Number of youth who gain knowledge in natural resources and shooting sports

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	2100	6428

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth need opportunities to develop assests such as communciation skills, organizational abilities, wise decision-making skills, indepenence, and self-confidence and should demonstrate caring. They have oppportunities for such development through participating in the 4-H Natural Resources and Shooting Sports project.

What has been done

Some 337 programs were conducted reaching 6,518 youth. Some 416 youth developed hunter safety skills and 206 youth participated in county shooting sports projects.

Results

Of those participating, 98% (6,428) gained knowledge as a result of their involvement in this project. Youth set up habitats for wildlife, learned about endangered animals. Elementary school teachers used the 4-H water quality curriculum. Students learned about watersheds, ecosystems, aquifers, rock formation, pollution and recycling.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #24

1. Outcome Measures

Number of youth who develop good decision-making skills

Not reporting on this Outcome for this Annual Report

Outcome #25

1. Outcome Measures

Number of youth who develop and improve communication skills through speaking and debating

Not reporting on this Outcome for this Annual Report

Outcome #26

1. Outcome Measures

Number of child development trainings held.

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	621

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The state of South Carolina requires child care centers to be licensed. State law requires child care providers to receive 15 hours of in-service training per year. Therefore, leadership and services to child care providers in the development and implementation of quality child care training is crucial.

What has been done

Child development trainings have been offered throughout the reporting period. 1890 Extension offers its training at no cost to child care providers and collaborators.

Results

During the reporting period, 526 participants attended child development training. Thirty-eight care centers from 7 counties in the state were represented. 1890 Extension provided approximately 50 hours of training hours. The average cost is \$30 per class, which generates an average saving of 15,780. By 1890 offering the training, providers can reallocate the funds saved to other program areas. The cost of training and travel varies by agencies and/or schools. Extension takes the child care training to the people. Therefore, the transportation and travel cost for child care providers was reduced.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development
802	Human Development and Family Well-Being

Outcome #27

1. Outcome Measures

Identifying existing social and educational services to Hispanics

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	23

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

To educate and inform state agencies and communities about the impact and/or lack of social and educational services to Hispanics. A database will be developed of the Hispanics in the state and expand the information for developing human capital and leadership in the Hispanic community.

What has been done

Data was collected on Hispanics regarding medicaid and WIC. New standard scales were generated from the raw data by developing the application systems to perform further analysis. The research consisted of 23 counties (grouped into 4 regions) were involved in the research.

Results

Numerous research papers and posters were prepared, published in proceedings and journals. Data sets and scales created can be utilized by state agencies to make the appropriate management decision regarding services (medicaid and WIC) provided to Hispanics. The researcher is in the process of preparing final bulletin for publication.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development
802	Human Development and Family Well-Being

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

The South Carolina 4-H Hispanic Outreach Initiative has impressive momentum. we are reaching Latino youth and their families in growing numbers.

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

1. Evaluation Studies Planned

- After Only (post program)
- Before-After (before and after program)
- During (during program)

Evaluation Results

Overall, 3,315 programs were conductedreaching about 89,910 people (represents repeated contacts with clientele).Of this number 79,775 (89%) reported a gain in knowledge.

Key Items of Evaluation

Program #10

V(A). Planned Program (Summary)

1. Name of the Planned Program

Environmental Conservation for Wildlife

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
135	Aquatic and Terrestrial Wildlife	100%	100%	0%	100%
	Total	100%	100%	0%	100%

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	5.0	0.0	0.0	0.0
Actual	4.3	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
152233	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
152233	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Some 89 programs were conducted reaching over 3,299 people. In addition, the US Forest Service and Clemson Extension partnered on a project, The Indian Creek Wildlife Habitat Restoration Initiative (ICWHRI) on the Enoree Ranger District and adjacent private lands, which received two national awards recently. The John R. McGuire Award is presented by the National Association of Forest Service Retirees (NAFSR) to deserving Forest Service employees for outstanding work in natural resources management and The Two Chiefs' Partnership Award recognizes exemplary employees and projects from the Forest Service, NRCS, State Forestry Agencies, and Conservation Districts who have worked collaboratively to support conservation and forest stewardship.

The project focuses on the re-establishment of warm season native bunch grasses and the eradication of the competing invasive species through practices such as thinning and prescribed burning. A total of nine partners (federal and state agencies and conservation organizations) and 21 private landowners are involved in the ICWHRI. Recently this project received national recognition through the receipt of two Forest Service awards.

Clemson Extension was instrumental in the success of this project through development of informational programming and tours to educate and encourage the participation of the adjoining private landowners involved in the project.

2. Brief description of the target audience

State, local government and civic leaders, business owners, developers, home and garden clubs, area homeowners, wildlife specialists, state and federal biologists and administrators, potential volunteers, farm and forest owners, landowners/homeowners, Nuisance Wildlife Control Operators, natural resource professionals, Aquatic Pesticide Applicators, general public, farmers, ranchers, poultry and swine producers, foresters, urban, suburban and rural residents, urban planners and managers, concerned citizens, land owners/managers, agency personnel, citizens of South Carolina, Extension agents, youth, municipal officials, and local community groups statewide, children in school, after-school, summer and 4-H, programs, Extension administrators, and support staff

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	2500	1000	0	0
2008	3299	394795	0	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	0	
2008	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of people completing educational workshops

Year	Target	Actual
2008	6000	3299

Output #2

Output Measure

- Number of workshops conducted

Year	Target	Actual
2008	150	89

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of urban wildlife plans (i.e. greenspace, waterways, forested sections) and models for area developers and municipalities developed
2	Number of people reporting knowledge gained
3	Number of people using practices from this program

Outcome #1

1. Outcome Measures

Number of urban wildlife plans (i.e. greenspace, waterways, forested sections) and models for area developers and municipalities developed
Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Number of people reporting knowledge gained

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	3000	3121

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Over three fourths of the wildlife habitat in SC is owned by private landowners, primarily forest and farm owners. Consequently there is an information need related to managing wildlife on these lands and improving aquatic wildlife habitat.

What has been done

Programs were conducted reaching 3,299 landowners. Master Wildlifer II was broadcast live over satellite from Clemson University's studio and delivered to 18 downlink sites across South Carolina in four two-and-a-half hour evening sessions in 2008. Cost of Master Wildlifer II was \$100. It was also made available on DVD for (\$125.00) after the course. The course reached over 241 landowners across SC who reported owning or managing over 124,462 acres.

Results

Over 94% of the participants (3,121) gained knowledge. Sales of DVDs continue. Landowners reported that the information learned helped them save or earn a collective \$1.09 million from management and use of their lands for wildlife. Since the majority (over 72%) of wildlife habitat in SC is owned by private landowners, the course had a major impact on improving these lands for wildlife and other natural resources.

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife

Outcome #3

1. Outcome Measures

Number of people using practices from this program

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	2200	1130

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Over three fourths of the wildlife habitat in SC is owned by private landowners, primarily forest and farm owners. Consequently there is an information need related to managing wildlife on these lands and improving aquatic wildlife habitat.

What has been done

Eighty-nine educational programs were conducted.

Results

Of the 3,121 persons gaining knowledge, over 36% actually reported using practices learned.

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy

Brief Explanation

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

1. Evaluation Studies Planned

- After Only (post program)

Evaluation Results

Over 94% (3,121) of the participants in Extension wildlife programs gained knowledge.

Key Items of Evaluation

Program #11

V(A). Planned Program (Summary)

1. Name of the Planned Program

Sustainable Forest Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
122	Management and Control of Forest and Range Fires	30%	30%	0%	30%
123	Management and Sustainability of Forest Resources	50%	50%	0%	50%
124	Urban Forestry	20%	20%	0%	20%
	Total	100%	100%	0%	100%

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	6.0	0.0	0.0	0.0
Actual	3.4	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
84105	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
84105	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
73963	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

This program delivered over 170 programs and reached 5,120 people. Programs conducted included topics such as conservation forestry field days, longleaf pine, prescribed fire and TOP Logger education programs to train loggers on sustainable forestry and alternative silvicultural systems. Twenty people attended a Tree Planter Certification Workshop and all passed the test and are now on the Forestry Commissions Certified Tree Planters List. Sixteen TOP logger education workshops reached 291 persons. Logging Cost Analysis workshop was conducted and a Timber Taxation workshop was conducted.

2. Brief description of the target audience

Private landowners, loggers, professional resource managers, foresters and other natural resource professionals, road building and site preparation contractors, family forest landowners, consulting foresters that assist private landowners, and the general public

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	6100	300	0	0
2008	5120	36641	0	0

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

Patent Applications Submitted

Year Target

Plan: 0

2008 : 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	0	
2008	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of people completing educational workshops

Year	Target	Actual
2008	3100	5120

Output #2

Output Measure

- Number of training programs conducted to teach sustainable forestry principles

Year	Target	Actual
2008	150	170

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Number of people reporting increased knowledge
2	Number of people practicing skills learned
3	Number of landowner acres impacted.
4	Number of acres with 25% increase in productivity
5	Landowner contacts by master landowners
6	Number of landowners regenerating after harvest
7	Number of loggers completing logger education

Outcome #1

1. Outcome Measures

Number of people reporting increased knowledge

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	2100	4269

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Our state's forest lands are under increased pressure to provide commodities for society. As a result, more emphasis has been placed on intensive management which places many wildlife species at risk because of habitat loss. It is important that people manage forest land for multiple needs without negatively impacting wildlife that could wind up on the threatened or endangered species list.

What has been done

Clemson Extension has partnered with the American Forest Foundation, SC Department of Natural Resources, SC Forestry Commission, The Nature Conservancy, and the U.S. Fish and Wildlife Service to host a series of Conservation Forestry Field Days throughout the Coastal Plain of South Carolina. Ninety-nine family forest landowners who own more than 68,000 acres of land attended the programs. At the field days, they learned how to use herbicides, prescribed fire, manage and restore longleaf pine, and timber harvest to improve wildlife habitat for dozens of declining wildlife species that need this management to keep their habitat on the landscape.

Results

As a result of the programs, landowners plan on converting 650 acres to longleaf, use thinning to improve wildlife habitat on 7,830 acres, use herbicides to improve wildlife habitat on 4,200 acres, and use prescribed fire on 13,850 acres. They indicated the information received in the field days would help them save \$10,000 and earn \$102,000 in the future when managing their forest land in addition to improving habitat for conservation-reliant species. Finally, as a result of these workshops, a 'Forest Ecosystem Handbook for Conservation-Reliant Species' was produced and distributed to more than 2,000 Family Forest Landowners in South Carolina, a result of the partnership. Some 4,269 reported knowledge gained.

4. Associated Knowledge Areas

KA Code	Knowledge Area
122	Management and Control of Forest and Range Fires
123	Management and Sustainability of Forest Resources

Outcome #2

1. Outcome Measures

Number of people practicing skills learned

Not reporting on this Outcome for this Annual Report

Outcome #3

1. Outcome Measures

Number of landowner acres impacted.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	12000	78000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Participants will use best management practices learned in sustainable management of forest systems and other natural resources. The use of best management practices will yield more economic benefit for landowners.

What has been done

A total of 78,000 acres were managed by participants.

Results

Participants reported that the program would save them \$56,000 in management costs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
122	Management and Control of Forest and Range Fires

Outcome #4

1. Outcome Measures

Number of acres with 25% increase in productivity

Not reporting on this Outcome for this Annual Report

Outcome #5

1. Outcome Measures

Landowner contacts by master landowners

Not reporting on this Outcome for this Annual Report

Outcome #6

1. Outcome Measures

Number of landowners regenerating after harvest

Not reporting on this Outcome for this Annual Report

Outcome #7

1. Outcome Measures

Number of loggers completing logger education

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	15	291

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Participants need to use best management practices learned in sustainable management of forest systems and other natural resources. The use of best management practices will yield more economic benefit for landowners.

What has been done

Sixteen TOP logger education workshops reached 291 persons.

Results

All participants reported an increase in knowledge.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy

Brief Explanation

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

1. Evaluation Studies Planned

- After Only (post program)
- During (during program)

Evaluation Results

Of the 5,120 people participating in forest management programs, 83% gained knowledge.

Key Items of Evaluation