

## Accountability Report Transmittal Form

Agency Name: **Public Service Activities – Clemson University**

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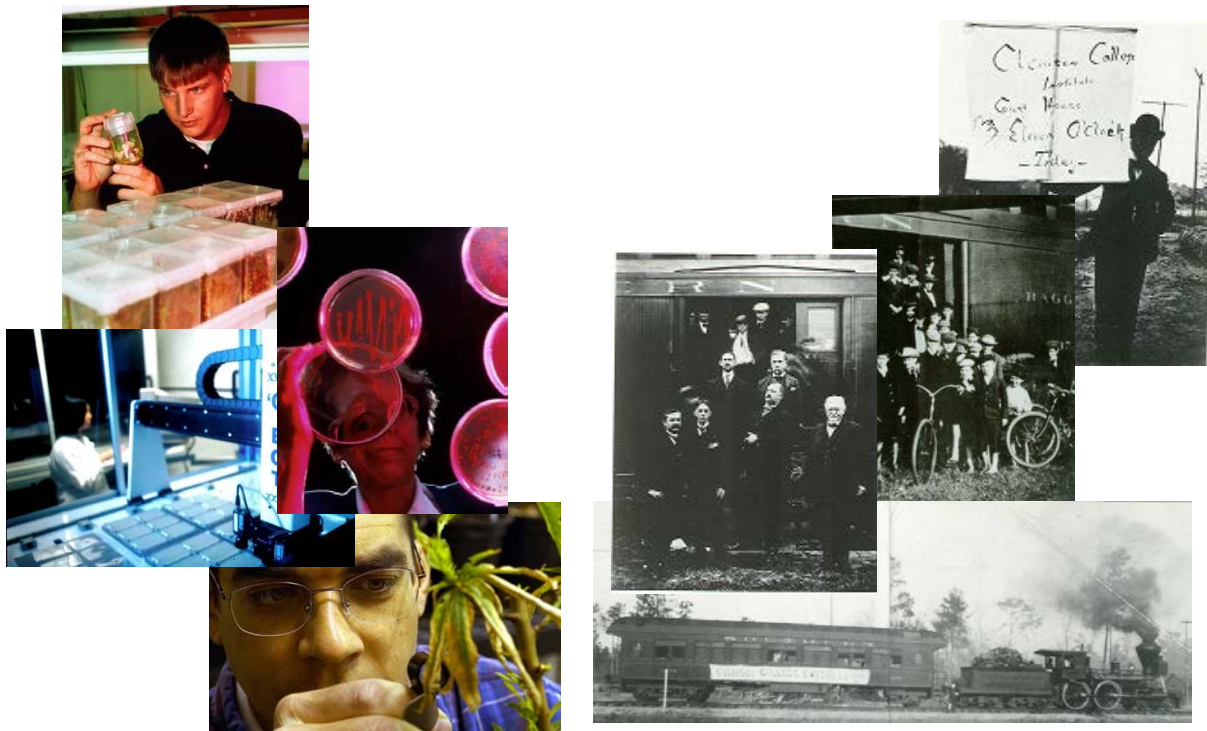
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# Clemson University Public Service Activities

*Serving South Carolina since the 1890s*



## Budget and Control Board Accountability Report

**2003-2004**



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## Section I – Executive Summary

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### **I-1 Mission and values**

Clemson University was founded in 1889 on one person's belief that education would create a better way of life for the people of South Carolina. Since its opening the institution has provided public service programs that help citizens, private enterprises and public agencies resolve their day to day problems. As our state's education, research and information needs change over the years, the university welcomes the opportunity to address these changing needs. Exciting, new solutions are being developed to help South Carolinians face the challenges of today and prepare for the future. Within the divisions, departments, institutes, centers of our university and in every county of our state and across the world, Clemson's Public Service is fulfilling the founding mission through outreach efforts.

PSA has a three fold mission:

*Develop new biological, physical and social science information and present educational programs on food, fiber, forestry, natural resources and economic growth which will help the citizens of South Carolina improve the quality of their daily lives.*

*Protect farmers, citizens and the ecosystem from the spread of animal and plant diseases and invasive species and insure the quality of seeds, fertilizers, meats and organically produced crops grown in the state.*

*Provide opportunities for children, businesses and communities to realize their full potential and develop an appreciation of the delicate balance of air, soil and water which will ultimately determine the quality of our future.*

### **I-2 Major achievements from past year**

#### **Efficiencies and Cost Savings Achieved**

- The merging of the Departments of Plant Industry and Fertilizer and Seed Certification Services into one department (Department of Plant Industry) has resulted in cost savings and increased efficiency through better utilization of staff resources. Leadership responsibilities for the various program areas and administrative functions have been reassigned to better align employee strengths with job functions.
- The Agriculture Service Laboratory (ASL) units were merged into Regulatory Services. The ASL performs complementary services that include soil, plant, water, manure, feed, and compost analyses; nematode assays; and the Plant Problem Clinic. Having the plant disease diagnostic laboratory unit in the Regulatory Services infrastructure will ensure that Homeland Security diagnostic concerns will receive top priority, thus improving agroterrorism prevention.
- We are planning to make the Agriculture Service Laboratory self-supporting within five years. A first step in this process will be to market soil sampling kits to retail garden outlets and increase the number of homeowners purchasing this service.
- DPR data entry duties have been merged when vacancies occurred, saving approximately \$29,000 in salary and fringe-benefit costs. In the second quarter of

2004, DPR eliminated the use of pagers and equipped all field inspectors with cell phones and is using digital camera in lieu of conventional cameras for documentary and evidentiary photographs

### **Identifying Outside Resources**

- Approximately \$11 million in grant funding was secured to leverage, support and expand PSA activities

### **Education and Outreach**

- Clemson Extension Service conducted 9,300 educational programs throughout the 46 counties of South Carolina. The total number of participants in these programs was 174, 684. Of those individuals participating, 77% reported gaining knowledge. Over 68% who increased knowledge in a program reported that they either plan to adopt or have actually adopted a practice.
- Approximately 604,000 contacts were made by Extension personnel in the delivery of educational information. In addition to programs, this total reflects such contact methods as telephone, office walk-ins, farm and home visits, and newsletter and periodical distribution.
- A grant of \$3.74 million was received from Boys and Girls Clubs of America.
- More than 300 leaders were trained by the Leadership Institute.
- A program to aid in grants development was established named “Virtual Consultancy”.
- Completed a three-part analysis and reporting of state transportation infrastructure needs and funding options.
- Initiated a series on the plausibility and potential impacts of the “No Child Left Behind” school choice provisions for SC’s neediest schools.
- Initiated an agreement with Georgia Tech for a workshop on issues in the Savannah River Basin.
- Co-sponsor for the University Biocomplexity Seminar Series.
- In addition to continued work on on-going projects three new research projects have been awarded: Reedy River Education Coordinator, a new position funded through SCDNR; The New York State Wetland Monitoring System: Establishing the use of Remote Sensing for a First Order Assessment; and Near Real Time Delivery of Imagery Data.
- Through the South Carolina Rural Communities Compassion Project, \$400,000 in sub-awards was distributed among 30 faith- and community-based organizations across the state to build capacity to address community issues related to hunger, homelessness, at-risk children, people transitioning from welfare to work and those in need of intense rehabilitation such as addicts and prisoners.
- 260 leaders of non-profit organizations from 41 counties received technical assistance on capacity-building through distance learning locations conducted across the state sponsored by the South Carolina Rural Communities Compassion Project.
- Through the Strong Communities for Children in the Golden Strip Project, southern Greenville county implemented a foundation funded multi-year, multi-million dollar project to reduce child maltreatment. More than 2,000 individuals have volunteered in STRONG COMMUNITIES since its inception in spring 2002.

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- Completed design charrette for DJJ - this activity has generated has resulted in additional private funding sources for DJJ and provided impetus for programmatic changes.
- Named 3 additional Renaissance Communities – Bluff Road CDC, Roosevelt Village CDC and the Town of Blackville. – services provided included a master plan charrette for Roosevelt Village, programming assistance at Bluff Road CDC and initial support for Blackville.
- Completed county wide recreation and park plans for Allendale and Barnwell Counties.
- Conducted public input process for DNR to gather input required for submission of Wildlife Conservation Plan.
- Convened 3 meetings of the Collaborative Colloquium – composed of more than 50 state agencies and non-profits, convened to coordinate service delivery to communities.
- Provided instruction at 3 sessions of the SC Economic Developers School.
- Provided technical assistance to Ellore (marketing), Great Falls (community center), Pageland (planning) Allendale (Planning), Allendale County (broadband feasibility study) and Bishopville (with Rural Crossroads Institute)
- Led design charrettes for Pageland, Town of Kershaw, and Kershaw County.
- Conducted Palmetto Leadership Program in 9 communities for 233 people

**Homeland - Security, Food and Public Safety**

- South Carolina was featured nationally (Fox News and MSNBC) for its progressive legislation regulating fertilizer that could be misused as an explosive.
- Protecting South Carolina from agroterrorism attacks remains a focus and a newer program for Regulatory and Public Service Programs (Regulatory Services). Public Service Activities' units were instrumental in the SLED decision to include an "agriculture" assessment component in the U.S. Department of Homeland Security's assessment of vulnerabilities for South Carolina.
- Regulatory Services made 5,661 Homeland Security contacts with the regulated community, pesticide dealers and applicators, fertilizer retailers, aerial applicators, nurseries, and greenhouses. These contacts were to continue to administer legislation regulating fertilizer that could be misused as an explosive, prevent the misuse of pesticides and aerial application aircraft, and prevent the intentional introduction of plant pests into SC agriculture by terrorists.
- The Director of Regulatory Services continued to chair the statewide agroterrorism committee commissioned by SLED.
- Savings for consumers were over 2 million dollars resulting from Pesticide Regulation (DPR) investigations of structural pest control activities.
- 23 SC counties were surveyed and 69 sites were inspected totaling over 15,000 acres, for the extremely invasive weed, Tropical Soda Apple (TSA). Over 9,172 TSA plants were destroyed this year. There are presently 18 TSA infested counties at 32 sites in SC.
- Positive identification of Sudden Oak Death, a newly introduced and potentially devastating disease in South Carolina nursery stock resulted in substantial redirection of effort to protect the state's forest and nursery resources. The immediate threat has been averted through timely sampling and testing with minimal disruption to the nursery industry.

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- All sweet potato fields in South Carolina were monitored for the presence of sweet potato weevil in an effort to maintain the state’s weevil-free status and end a quarantine on SC sweet potatoes imposed by North Carolina
- Survey efforts have been initiated to determine if a new and very invasive weed species known as benghal dayflower (*Commelina benghalensis*) has become established in South Carolina. This weed is highly resistant to glyphosate (Round Up®) herbicide and has infested over 200,000 acres of Round Up Ready® cotton and soybeans in Georgia. Positive identification of this weed will allow control measures to be taken to avert devastating crop losses.
- Emphasis has been given to sampling and analyzing fertilizer raw materials in an effort to mitigate production problems before they reach the end user.
- The amount of requested funds processed this year increased from \$30 million to \$80 million. More than 85% of these funding requests are still pending.
- Successfully established 3 new phorid release site and now have 10 such sites established around SC where IFA populations are being reduced.
- Administered \$515,227.00 in Federal Awards from USDA Coop Agreements, SLED grants, and SC Emergency Management grants for FY03-04, as follows:

<u>Award</u>	<u>Amount</u>
Brucellosis	\$ 25,572
Exotic New Castle Disease	100,000
Foreign Animal Disease, BSE, Animal Emergency	98,230
Foot & Mouth Disease/Swine Garbage Surveillance	38,000
SC Emergency Management Division	50,000
SLED/Office of Disaster Preparedness (ODP)	30,000
Homeland Security	18,425
Scrapie	5,000
Voluntary Johne’s Surveillance	150,000

- Acquired new equipment and lab renovations through USDA Cooperative Agreement and ODP/SLED Homeland Security
- Completed state-wide agroterrorism threat assessment
- Enhanced animal emergency response coordination through participation in tabletop exercises with the Port Authority and statewide exercises with the SC Emergency Management Division
- Conducted training for over 200 personnel in the Incident Command System
- Provided inspection and surveillance at 107 slaughter and processing establishments and 12 livestock markets
- 75% of LPH veterinarians trained at Plum Island or National Veterinary Services Laboratory on Foreign Animal Disease investigation and diagnosis
- Expanded molecular diagnostic section of the laboratory
- Recent hires of a virologist and microbiologist enhanced expertise to implement cutting edge technology into the laboratory
- Initiated PCR technology in veterinary diagnostic protocols
- Implemented control on “downers” at meat packing plants to reduce the risk of BSE (Mad Cow Disease)
- Successfully met the standards and criteria to ensure the continued health and safety of the livestock and poultry industries in the state
- 100% compliance with national laboratory accreditation, qualified and certified disease free status and “equal to” status with the USDA/FSIS



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- Meat Poultry Inspection Department - “equal to” status with the USDA/FSIS
- USDA Qualified Pseudorabies-Free status and Validated Brucellosis-Free status in swine
- USDA Certification for Brucellosis and Accreditation for Tuberculosis in Cattle
- Veterinary Diagnostic Center completed the American Association of Veterinary Laboratory Diagnosticians (AAVLD) review. Results are pending.

**Discovery**

**Patent Disclosures:**

- Antitumor & Antimutagenic Activity of Shortia Galacifolia (the Oconee Bell) E
- Detection of Small Molecular Chemicals Using Nanoparticle-based Radioim
- Bile Acid & Steroid Binding Properties of Indulin AT
- Ex Vivo Tissue Engineered Test System for Breast
- Tissue Composite Teat Sealant for Mastitis Prevention
- Feed Supplement Delivery System
- Utilization of Biomaterial waste from Biodiesel Production for Growth of Micro...
- Liquid Pipette Extraction
- Gossypol Monoclonal Antibody & its Applications
- Process for Ozonating & Converting Organic Materials Into Useful Products
- Microbial Resistant Capsules for Nutrient Delivery in Ruminants
- Genes Controlling Winter Dormancy in Woody Perennials
- 1 New Patent:
  - Intermittent Immersion Bioreactor for Plant Propagation
- 1 New variety released:
  - Liberty Sweet Potato, Joint with USDA, August, 2003
- 111 Technical Contributions to scientific and technical journals:
- 24 Mentions in the National Media

**Research Initiatives:**

- Animal waste will be treated with the strong oxidizing agent ozone. Before and after samples will be collected and analyzed for differences in microbiological and chemical parameters of pollution.
- Several different aspects of maximizing profitability from low-input or organic dairies are being evaluated.
- Research is underway to increase the understanding of how to extend asparagus and strawberry production into the holiday season. Research will determine how to produce organic vegetables and herbs and will develop environmentally adapted medicinal plants with high marker compounds for the dietary supplement industry.
- Research continues to enhance the scope of animal disease epidemiology, reporting, surveillance, and emergency response preparedness. Animal disease reporting currently has no geositional satellite coordinates to link disease outbreaks to location or premise
- Procedures and practices are being devised to compile animal related data, and use it through ArcGIS 8.1 to speed information access, sharing and allow maximum animal emergency preparedness and response efforts in SC. Rapid use

of animal data is critical in order to carry out credible response, minimize damage and speed recovery of agricultural industry and companion animals.

- Research has begun to learn more about a specific population of cells in the mammary gland that are likely critical in controlling mammary development.
- The IRM Beef Production Systems project is evaluating the productivity and profitability of integrating EPD's, breeds, crossbreeding, and breed complementarity with available management, feed, forages, herd health, etc. resources into a total conception to consumer production system for South Carolina's Coastal Plains that maximizes genetic and phenotypic uniformity.
- Traditional plant breeding has limitations to crop improvement and the chromosomes of crop plants must be examined to facilitate crop improvement using recombinant DNA techniques. Scientists will develop DNA blueprints (physical frameworks) of the genomes of crop plants that can be used by plant geneticists for crop improvement.
- Work continues to develop the technologies, principles, and concepts of site-specific management of soil compaction, nematodes, weeds, and irrigation in coastal plain soils.
- The soybean cyst nematode is one of the most devastating pests of soybeans. Resistance to many soybean pests has been found in primitive germplasm.
- Genetic engineering will be used to exploit the genome of the primitive germplasm with broad resistance to soybean cyst nematodes to identify how the plant deals swiftly with stress, and to devise more lasting protection against the nematode in modern cultivars.
- SC farmers historically make little use of crop revenue coverage (CRC) insurance relative to farmers in other states. Research is underway to determine why CRC insurance is little used in SC.
- Scientists are developing and testing effective integrated weed management strategies that will minimize herbicide usage while ensuring adequate season-long weed control.
- Abiotic and biotic stresses on the soybean plant combine to decrease seed yields and limit grower profits. Research is in progress to enhance understanding of the genetics of resistance to these stress factors and develop soybean germplasm and cultivars having improved seed yield, improved pest resistance traits, and the desired seed composition traits.
- New IPM strategies are being developed to effectively utilize new technologies such as transgenic cottons while solving problems such as insecticide resistance. Beneficial insects, transgenic cotton varieties and new safe insecticides that allow farmers to control pests in profitable production systems will be considered in developing these new strategies.
- Research is underway to accelerate the development and implementation of cost-effective, environmentally safe alternatives to chemical pesticides for insect control.
- A new system has been developed to mechanically remove tobacco flowers without spreading bacterial wilt, a major disease in flue-cured tobacco
- Management systems are being developed using new advances in DNA based pathogen identification, for control of root knot and bacterial wilt of tobacco.
- Developed and made commercially feasible specifically designed constructed wetland treatment systems that remove toxic elements from waste water streams

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such as Mercury, Selenium, and Arsenic to levels of 97 to 99%. This removal is unprecedented by current chemical or physical treatments (50 to 80% removal).

- The constructed wetland treatment systems designed to remove copper and mercury for Savannah River site have resulted in greater than \$10 million savings and restored life in the receiving streams. This work won a DOE award.
- Calculated the number of intensively managed (chemical and fertilizer use) pine plantation acreage. Data will be used in long term timber supply projections for economic development.
- Performed locational analysis to determine best locations for mill development sites for industries using small diameter timber. This has been and will continue to be a heavily used economic development tool.
- Determined the amount of tree canopy changes in the Interstate 85 corridor over the last 20 years and quantified the impact on air pollution.
- Confirmed that a complex of hydrilla (water weed) and blue-green algae causes AVM, a deadly brain disease, in bald eagles and waterfowl.
- A major grant was received from the Doris Duke Foundation to further forest management practices and conservation in the coastal plain
- Growth and control research began for Beach Vitex, a plant species that may become a problem for the SC coast
- Nanotechnology will be used to develop rapid and simple biosensors to detect the presence of intentional and ubiquitous toxic agents in food and water. Additionally, active films will be developed to reduce the risk from these toxic agents by using natural materials.
- New turfgrass cultivars are being released with limited research on their suitability and best management strategies for central and coastal South Carolina. Researchers will investigate the suitability of new turfgrass cultivars and develop environmentally sensitive management practices for central and coastal South Carolina.
- Research will establish invitro cultures of various medicinal plants, investigate their active ingredients and conduct preliminary bioassays to assess biological activity of medicinal plant products or extracts.
- Recent interest in plant antioxidants in human health has stimulated the interest in functional phytochemicals of food crops and increased awareness of importance of fresh produce in daily diet. If functional properties can be enhanced, profitability for the producer and health benefits for the consumer can be enhanced.

**I-3 Key strategic goals for present and future years**

For several years, the mission of Public Service Activities at Clemson is to focus our efforts around programs in the following five goal areas: (1) **Agrisystems Productivity and Accountability**; (2) **Economic and Community Development**; (3) **Environmental Conservation**; (4) **Food Safety and Nutrition**; (5) **Youth Development**. These goal areas complement the university's ten-year goals in the Southern Association of Colleges and Schools (SACS) assessment procedures and in the five-year plan of work, which is negotiated with the U.S. Department of Agriculture. All of the units within PSA have aligned their programming, funding, evaluation, and accountability functions around these five goal areas which are then aligned with the following goals of Clemson University, in the spirit of "One Clemson."

Clemson University goals:

<b>Academics, research and service</b>	<b>Campus life</b>
<b>Student performance</b>	<b>Educational resources</b>
<b>Clemson's national reputation</b>	

A new initiative at Clemson was implemented last year and it directly affects PSA. The Academic Plan focuses on eight broad “emphasis areas” that foster collaboration and promote the integration of teaching, research, and service. Instead of marshalling all resources to departments and colleges, there is a focus on programs that provide interdisciplinary research and service venues, unique platforms for enhanced scholarship, and increased opportunities for graduate and undergraduate students.

These new emphasis areas are as follows:

- **Leadership and Entrepreneurship**
- **Information and Communication Technology**
- **Family and Community Living**
- **Advanced Materials**
- **Automotive and Transportation Technology**
- **General Education**
- **Biotechnology and Biomedical Sciences**
- **Sustainable Environment**

#### **PSA Programs Planned for the Present and Future Years:**

1. Sustainable Agricultural Production Systems
2. Natural Resources and Environmental Research and Education
3. Sustainable Forestry Management and Environmental Enhancement
4. Integrated Pest Management (IPM) for Agriculture and Forestry
5. Risk Management Systems for Agricultural Firms
6. Agricultural Biotechnology
7. Household and Structural Pest Control and Pesticide Training
8. Environmental Horticulture Education
9. Reducing the Impact of Animal Agriculture on the Environment
10. Agricultural Bio-security
11. Meat Inspection
12. Animal Health and Diagnostic Laboratory
13. Plant and Seed Certification
14. Pesticide Regulation
15. 4-H and Agricultural & Natural Resource Programs for Youth
16. Food Safety and Nutrition
17. Community Leadership and Economic Development
18. Agricultural Education Teachers' Salaries
19. Agro Medicine (pass-thru)
20. Bio-Engineering Alliance
21. South Carolina Institute for Energy Studies
22. Distance Education
23. Others

#### **Planned Efficiencies and Cost Savings**

##### **Leveraging Strategies**

Increase joint funding with academics for teaching personnel and facilities  
Increase funding from county government, generated revenues, and grants for  
County Agents

- Develop a comprehensive pricing and distribution system for all publications, services, and educational programs
- Regionalize research and extension programs by working with other universities.

### **Enhancement Strategies**

- Build Research and Education Centers into distance education and graduate education centers
- Encourage comprehensive teams that link teaching, research, extension and regulatory activities
- Expand consumer information delivery systems via e-Extension and mass media
- Free agricultural County Agents to focus on commercial clients
- Enhance delivery of Master Gardener programs through distance education
- Engage students in experiential learning
- Develop national/international prominence in key emphasis areas

### **Incentive System**

- Develop bonus models to drive institutional priorities, leverage resources and advance the University's vision of becoming a top twenty public university
- By aligning with mission and program needs, building leveraged resource opportunities, funding venture capital investments and encouraging teamwork

### **Cost Saving Strategies**

- Consolidate county program planning with RECs, Institutes, and on-campus
- Increase external funding for designated services and facilities
- Increase funding of technical staff through grants or generated revenue
- Reduce travel expenses with high-speed internet and Polycom.
- Improve productivity and reduce costs with laptop computers and cell phones
- Reallocate positions as TERI employees retire

### **Timelines and Expectations**

- Phase in changes over a five-year period, develop an incentive system to adopt new strategies, establish a mentor system to help faculty and staff succeed, and implement, evaluate and improve

## ***I-4 Opportunities and barriers that may affect the agency's success in fulfilling its mission and achieving its strategic goals.***

### **Opportunities**

- Extension has agents that cover each county and subject matter specialists on campus at Research and Education Centers who provide direction for the major initiative areas within the organization through the development of programs, trainings, and education materials
- Maintain national laboratory accreditation, qualified and certified disease free status and "equal to" status with the USDA/FSIS
- Minimizing the impact of disease on the export markets
- Successfully complete USDA/FSIS Comprehensive Review
- Successfully complete AAVLD Review
- Replace and recruit highly skilled professional and technical staff to fill mission critical positions.
- Enhance the concept of "One Clemson" by participating in research and teaching at the graduate and undergraduate level.

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- Expand curriculum by collaborating with the Research Education Centers (REC) to include masters and doctoral courses. Increases the number of doctoral graduates enabling CU to achieve Top 20 Status
- Enhance pre-veterinary program
- Utilize telecom to expand student participation
- Decrease of dependence on State funds provides rationale for market approach to project billing and employee compensation.
- Opportunities exist to lead and partner with public, private and non-profit organizations to improve and strengthen communities.

**Legislative Initiatives**

**Capital**

- Baruch Institute for Coastal Ecology and Forest Science facility
- Animal Research Center
- Bio-processing Center
- Turfgrass Research and Extension Center

**Recurring**

- Biotechnology research
- Agricultural productivity and bio-security
- Restore base operating budget

**Proviso**

- Pesticide registration surcharge

**Barriers**

- The primary barrier that continues to inhibit the Extension Service from carrying out its mission and achieving its goals is decreased staffing as a result of state budget reductions, while the demand for educational programs and services from citizens increases. In FY 2001-02, Extension had 442 FTE's, representing 535 employees. In July 2003 Extension had 336 FTE, representing 407 employees. Budgetary constraints prohibit the organization from replacing all of the staffing losses
- The ability to respond to staffing needs resulting from successful grant contract efforts is often limited and delayed by restrictive state personnel policies. A reassessment of options for bringing talented people in for short term assignments in all areas of PSA would enhance the ability to leverage funds.
- Barriers for LPH include a shortage of critical professional and technical staff, and a lack of funded personnel positions for the federal cooperative grants
- Rigidity in staffing policies is affecting quick response to opportunities and policies concerning incentives, bonuses, etc. even when no State funds are used.
- The Inability to compensate trained professional and technical staff at a rate competitive with the private sector is a significant constraint.
- The reduction of our funding base threatens the ability of Regulatory Services to respond rapidly and geographically to the 56 mandates and their regulatory programs.
- Funding reductions threaten the security of food and agriculture.

**I-5 How the accountability report is used to improve organizational performance**

Each section of the accountability report is reviewed by the PSA Leadership Council to identify and prioritize specific areas where improvements and enhancements can be made before the submission of the plan for the following year. The implementation of identified recommendations to improve organizational performance begins immediately.

In addition, the performance excellence criteria in the accountability report are reviewed in relation to the plans and reports submitted both to USDA (South Carolina Plan of Work for Research and Extension) and to the Clemson University Office of Assessment

PSA has established means of assessment and criteria for success for all programs. These are reported to the university on a time line which parallels the reporting timeline of the Budget and Control Board Accountability Report, and while the two plans are formatted differently, the means of assessment are essentially the same.

Each year the annual report to the Office of University Assessment contains a description of the planned activities by PSA goal, the actual performance and a description of how the analysis of the reasons for discrepancies between planned verses actual performance is used to improve planning, programs and performance.

Due to space limitations in the BCB annual report, only the actual outputs and outcomes of the previous year's activities are reported in Section I-4. The planned goals, the relationship of the planned activities to actual performance and how the results of analyzing the planned vs. actual are used to improve programs are not included, once again, because of space limitations. A more generalized set of strategic goals is presented in Section I-2.

The annual report to the USDA is submitted in April of each year to accommodate research and Extension activities which are planned and reported in the plan of work run on the federal fiscal year (October 1-September 30). Reporting is more heavily focused on outcomes or impact than on the shorter term outcomes. PSA is moving to develop and find resources to support the development of sophisticated impact and performance analysis for use in all three of the major accountability reports.

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**Section II – Business Overview**

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**II-1 Number of Employees**

As of this writing PSA has 779 employees in 649 FTE's - 138 of these employees are paid in part or totally on grant funds. In addition, there are 98 positions funded solely by grant funds.

**II-2 Operation Locations**

Public Service Activities has at least one operation in every county in the state, in Extension offices, which are provided by the respective county government through a

*Clemson University Public Service Activities Accountability Report 2003-2004*  
 cooperative agreement. Operations are also carried out on Clemson University campus  
 as well as on locations in the immediate vicinity and the following sites:

- Aiken County.....Long Leadership Center
- Barnwell County.....Edisto Research and Education Center
- Charleston County.....Coastal Research and Education Center
- Clarendon County.....R.M. Cooper Leadership Center
- Florence County.....Pee Dee Research and Education Center
- Georgetown County.....Belle W. Baruch Institute of Coastal Ecology and Forest Science
- Pickens County.....Clemson Experimental Forest
- Richland County.....Sandhill Research and Education Center  
 Institute for Community and Economic Development  
 Livestock and Poultry Health
- York County.....Matthews Environmental Center
- Dominica, West Indies.....Archbold Tropical Research and Education Center

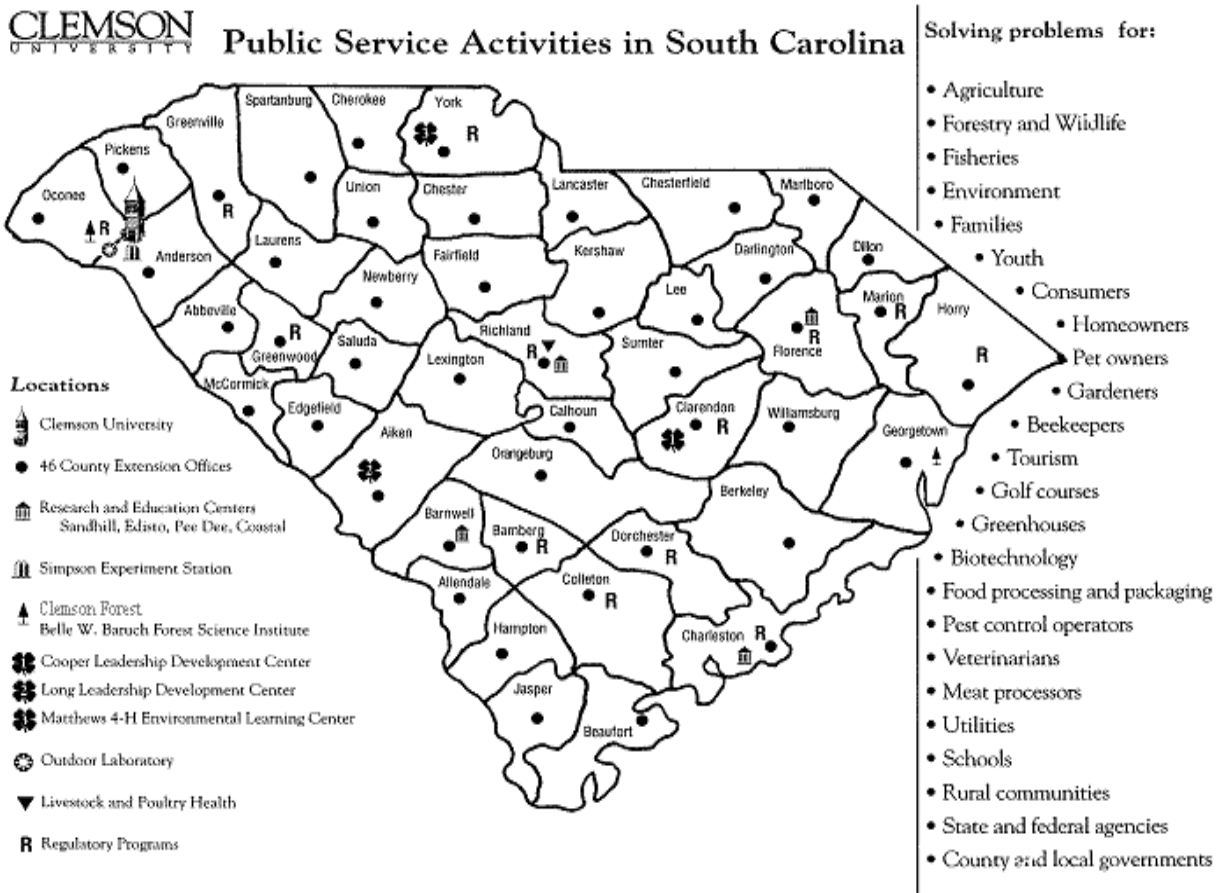


Figure II-1

**II-3 Expenditure/Appropriations Chart**

See figure below -- for expenditures/appropriations chart for PSA. It should be noted that PSA received 10.9% funding cut from appropriations in FY 2002-03. This resulted in the loss of the ability to fund 96 PSA FTEs. The individuals in these positions took advantage of retirement incentive packages. The loss of these hundreds of years of



*Clemson University Public Service Activities Accountability Report 2003-2004*  
 experience and programmatic and institutional knowledge has left critical voids in service areas

PSA leadership has reorganized, eliminated numerous administrative positions, broadened areas of oversight and geographic coverage and is still focused on meeting the vision of Clemson University. PSA will continue to increase its quest for new resources and collaborators. No other way exists to meet Clemson University's vision, mission, and goals.

### **Base Budget Expenditures and Appropriations**

Major Budget Categories	02-03 Actual Expenditures		03-04 Actual Expenditures		04-05 Appropriations Act	
	Total Funds	General Funds	Total Funds	General Funds	Total Funds	General Funds
Personal Service	\$42,471,535	\$30,858,976	\$34,466,140	\$23,373,597	\$32,755,953	\$25,855,568
Other Operating	\$17,866,695	\$7,627,936	\$18,193,739	\$7,804,044	\$12,738,922	\$2,505,229
Special Items	\$134,974	\$134,974	\$134,974	\$134,974	\$134,974	\$134,974
Permanent Improvements	\$	\$	\$	\$	\$	\$
Case Services	\$	\$	\$	\$	\$	\$
Distributions to Subdivisions	\$-257,995	\$-257,995	\$-177,247	\$-177,247	\$-177,247	\$-177,247
Fringe Benefits	\$11,459,024	\$8,713,657	\$10,173,858	\$7,498,892	\$9,195,792	\$6,602,800
Non-recurring	\$	\$	\$	\$	\$	\$
<b>Total</b>	<b>\$71,674,233</b>	<b>\$47,077,548</b>	<b>\$62,791,464</b>	<b>\$38,634,260</b>	<b>\$54,648,394</b>	<b>\$34,921,324</b>

### **Other Expenditures**

Sources of Funds	02-03 Actual Expenditures	03-04 Actual Expenditures
Supplemental Bills	\$ 0	\$ 0
Capital Reserve Funds	\$ 0	\$ 0
Bonds	\$ 0	\$ 0

### **Interim Budget Reductions**

Total 02-03 Interim Budget Reduction	Total 03-04 Interim Budget Reduction
\$4,043,222	\$388,747

Chart Series II-1

**II-4 Major Program Areas Chart**

Major Program Areas				
Program Number and Title	Major Program Area Purpose (Brief)	FY 02-03 Budget Expenditures	FY 03-04 Budget Expenditures	
		State: Federal: Other: Total: % of Total Budget:	State: Federal: Other: Total: % of Total Budget:	
			Key Cross References for Financial Results*	
I. Regulatory Services	Regulatory and Public Services' mandated programs ensure: 1) Safe and legal use of pesticides; 2) Quality of fertilizer and lime; 3) Prevention and control of introduced plant pests and pests of honey bees; 4) Certification of seed purity/germination; 5) Certification of freedom from plant pests in nursery, greenhouse and transplants; and administer 6) Quality assurance and identity preservation for transgenic crops, 7) Pesticide container recycling, 8) Boll weevil eradication, and, since September 11th, 9) Homeland Security. Our mission is to prevent, mitigate, and respond to agroterrorism.	State: 2,264,269.00 Federal: 995,999.00 Other: 1,226,734.00 Total: 4,487,002.00 % of Total Budget: 6%	State: 1,716,159.00 Federal: 890,020.00 Other: 1,834,862.00 Total: 4,441,041.00 % of Total Budget: 7%	
II. Livestock and Poultry Health	Livestock-Poultry Health is composed of three areas of service: the Diagnostic Laboratory, Animal Health Programs, and S. C. Meat and Poultry Inspection. This organization has a major role in protecting the quality of life for humans, as well as companion and food animals. Routine functions include: 1) Constant surveillance for diseases that affect both man and other animals, 2) Providing the diagnostic expertise that allows for treatment & eradication of disease of domestic animals, 3) Inspection & testing of processing of foods of animal origin, 4) Veterinary diagnostic support for wildlife also is provided by our diagnostic laboratory. 5) As the primary agency for ESF-17 in the State Emergency Operations Plan, our multi-agency coordination of statewide animal emergency response plans provides protection for livestock & wildlife, as well as supporting public health & safety.	State: 3,156,422.00 Federal: 1,991,669.00 Other: 319,143.00 Total: 5,467,234.00 % of Total Budget: 8%	State: 2,691,705.00 Federal: 1,353,745.00 Other: 227,078.00 Total: 4,272,528.00 % of Total Budget: 7%	
III. Agricultural Research	The Clemson Experiment Station 1) Develops unbiased, research-based knowledge for agriculture, natural resources, and the social sciences to enhance economic growth and development and quality of life. Clemson researchers 2) Make discoveries and contribute to the body of knowledge in biotechnology, food safety and security, economic and community development, ornamental horticulture, turfgrass, nutraceuticals, packaging science, water quality and the environment, while continuing to support and enhance production agriculture and forestry.	State: 18,591,638.00 Federal: 3,748,093.00 Other: 1,475,447.00 Total: 23,815,178.00 % of Total Budget: 33%	State: 15,608,512.00 Federal: 3,740,932.00 Other: 1,921,688.00 Total: 21,271,132.00 % of Total Budget: 34%	
IV. Cooperative Extension	The Clemson Cooperative Extension Service provides sound, scientifically based information to South Carolinians and helps them use that information to improve the quality of their lives. The statewide plan of work contains five PSA goals with programs covering a variety of topics. Extension implements educational programs through 1) Systematic linkages with advisory boards and program identification committees, (2) Effective networks with researchers within the land-grant system, (3) Diverse, proficient and visionary staff, (4) Strong statewide, national and global networks and collaborations with other agencies and organizations, (5) An accessible information system, and (6) State of the art technologies for program delivery.	State: 22,854,940.00 Federal: 7,890,915.00 Other: 6,948,685.00 Total: 37,694,540.00 % of Total Budget: 53%	State: 18,430,299.00 Federal: 6,982,145.00 Other: 7,206,738.00 Total: 32,619,182.00 % of Total Budget: 52%	
V. State Energy Research	1) The South Carolina Institute for Energy Studies (SCIES) is a state chartered research and development organization established in 1984 via the FY 1984 - 1985 General Appropriations Act. 2) SCIES is administratively housed at Clemson University, reporting to the Vice President for Research.	State: 89,957.00 Federal: Other: Total: 89,957.00 % of Total Budget: 0%	State: 83,654.00 Federal: Other: Total: 83,654.00 % of Total Budget: 0%	
VI. BioEngineering	1) The Bioengineering Alliance of South Carolina is a unique state program that promotes biomedical engineering education and research among Clemson University, the University of South Carolina, and the Medical University of South Carolina. 2) The Alliance shares faculty, research facilities, and other resources to foster interdisciplinary research among the participating campuses.	State: 120,322.00 Federal: Other: Total: 120,322.00 % of Total Budget: 0%	State: 103,930.00 Federal: Other: Total: 103,930.00 % of Total Budget: 0%	
<b>Below: List any programs not included above and show the remainder of expenditures by source of funds.</b>				
	<b>Remainder of Expenditures:</b>	State: Federal: Other: Total: % of Total Budget:	State: Federal: Other: Total: % of Total Budget:	

\* Key Cross-References are a link to the Category 7 - Business Results. These References provide a Chart number that is included in the 7th section of this document.

### **II-5 Key customers segments linked to key products/services**

Although our key customers are and continue to be the citizens of South Carolina, we reaching out into many new areas across the country and in other nations. The programs conducted by PSA are accessible to all people. The mission and goals of the organization lend themselves to people who are associated with agriculture, agricultural and forest products, business and industry, landowners and managers of natural resources, families and youth, limited resource families and rural and community leaders.

Customers also include pesticide and fertilizer sales and users, those who produce certified and enhanced seeds and plants, practicing veterinarians, county and local governments, business and industry, agencies who work in the areas of economic development, health, conservation, the environment, wildlife, water resources, technical education and youth and families.

### **II-6 Key stakeholders (other than customers)**

Other than our customers, and of no less importance to our mission and values, are our own employees. We take pride in being a “family” at Clemson University and that is certainly true in PSA. If it were not for our employees, we would not be able to serve our customers well. That is why these past few years have been troubling times for PSA administration. We have pursued, and will continue to pursue, every possible way to balance our budget without having to lose any of our employees. Hopefully, we will be able to accomplish this.

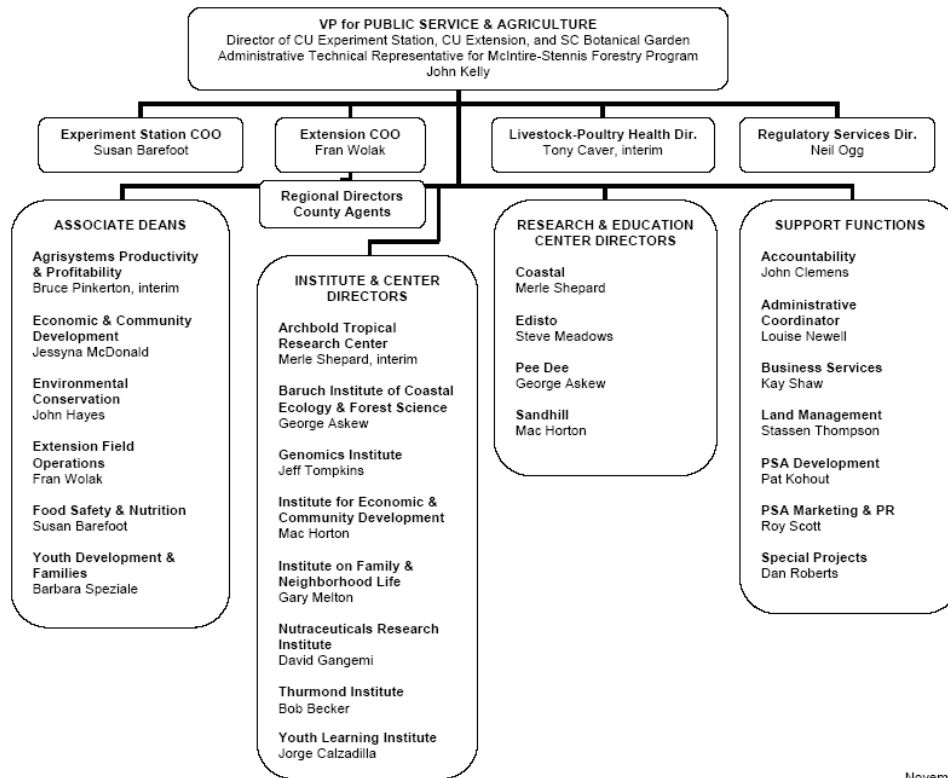
### **II-7 Key Suppliers**

The term “suppliers” is being used to describe agencies, organizations, groups of individuals and classifications of individuals who support PSA programs with funding, matching or in-kind support. Advisory boards provide invaluable support that is used to “build” program initiatives so they are included here as well. See list below:

- Federal, State, and Local Government
- Agriculture Council
- Cooperatives – SC Cooperative Council
- 4-H Donors
- Farm Bureau
- Green Industries
- Livestock Breed Associations
  - Agriculture Industry Associations – i.e. Soybean, Corn, Cotton Growers Associations
- Private Industry
- Foundations
- Private Non Profit Corporations.
- SC Poultry Federation
- State and Local Fairs
- County Advisory Boards
- Public Service Activities Advisory Board

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**II-8 Organizational Structure**

**CLEMSON UNIVERSITY PUBLIC SERVICE & AGRICULTURE**



November 2003

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## Section III – Elements of Malcolm Baldrige Award Criteria

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### *Category I - Leadership*

Clemson University, under the leadership of President James Barker, has established new Vision, Mission, and 10-Year Goals. The vision is for Clemson University is to become a nationally ranked top 20 public institution. Public Service Activities, under the leadership of Vice President John Kelly, embraces the vision, mission, and goals. The President, Vice Presidents, Deans, Directors and every faculty and staff member will be evaluated by their contribution to those goals.

The new 10-year goals of Clemson University that most closely relate to PSA are: setting the standard for relevant public service; increasing research programs to exceed \$100 million per year, which has now been achieved, and fostering Clemson's academic reputation through strong academic programs, mission-driven research, relevant public service and highly regarded faculty and staff. Performance measures to accomplish these, and other appropriate, 10-Year Goals have been incorporated into the performance review criteria for PSA's employees.

For the several years PSA has based their activities on 5 goal areas that are closely aligned with the federal goals established for USDA. These 5 goal areas encompass historically-based agriculture and future-based needs associated with agriculture. Agriculture is no longer what it was 100 years ago when individual farms were the norm. Today, agriculture must recognize its importance to the present and future economies of

the area, it must be concerned about how this industry influences the environment, it must be aware of the importance agriculture has on food safety and nutrition, and it must use its resources to help develop our youth to better appreciate the importance of this industry.

The PSA Goal Areas are:

- Agrisystems Productivity and Profitability, PSA Goal 1
- Economic and Community Development, PSA Goal 2
- Environmental Conservation, PSA Goal 3
- Food Safety and Nutrition, PSA Goal 4
- Youth Development, PSA Goal 5.

The Public Service Council is responsible for implementing programs, initiatives and activities under the five goals. The team consists of the following key leaders:

- Vice President of Public Service and Agriculture
- Chief Operating Officers for the Experiment Station and the Cooperative Extension Service
- Associate Deans for Agri-Systems and Productivity, Economic and Community Development, Environmental Conservation, Food Safety and Nutrition and Youth Development and Families.
- Director, Clemson University Activities Information Management System
- Chief Financial Officer for PSA
- Associate Dean for Extension

***◆How do senior leaders set, deploy and communicate?***

Senior leaders empower employees in a university setting and through feedback mechanisms in staff meetings and reverse evaluations of supervisors.

Professional development is offered formally in retreats or structured learning programs and in attendance in professional meetings. Meetings and training are often conducted with the advantage of distance communications systems which allow two way video and audio and avoid travel expenses and lost travel time.

Ethical behavior for all Clemson employees is identified in the University's *Fiscal Policies and Procedures and Personnel Policies and Procedures Manual*.

***◆How do senior leaders establish and promote a focus on customers?***

The commitment to customer service is reflected in the goals of PSA, and is supported by a sophisticated and long-standing network of advisory boards and committees at the county, regional and state levels. The focus on customer service is an element of each leadership team meeting. The President and Vice President meet with constituency groups on campus, at the Research and Education Centers and at Extension Service offices.

***◆What key performance measures are regularly reviewed by your senior leaders?***

The key performance measures, which are regularly reviewed by senior leaders include the numbers of individuals, groups, companies and agencies served, numbers of regulatory inspections and other services provided, the number of educational and public service events held, the number of patents, licenses, publications issued, resources leveraged, communication effectiveness and cost benefit analysis and other statistical measures of impact on the state and the nation. Performance measures are tailored to reflect performance in the five PSA goal areas and in the Clemson University goals and emphasis areas which were

*Clemson University Public Service Activities Accountability Report 2003-2004* described in Section 1-2 above. There are additional measures which are cumulatively reflected as accomplishments in Section I.

***◆How do senior leaders maintain fiscal, legal, and regulatory accountability?***

The organization is well equipped to monitor itself to maintain fiscal, legal and regulatory requirements. As a part of Clemson University, PSA leadership relies on the various offices within in the university and within PSA to make sure all aspects of the organization are in compliance.

***◆What key performance measures are regularly reviewed by your senior leaders??***

An organization this large has many levels with each level having very specific responsibilities and processes to measure performance. None the less, there a few measures that are considered key to the overall “health” of the organization. The following are but a few of these key measures:

- Number, amount, and types of sponsored research
- Number and types of contacts with stakeholders
- Dollar amount of gifts and pledges
- Number of stakeholders benefiting from PSA programs
- Number and types of research publications
- Total patents and licenses

***◆How do senior leaders use organizational performance review findings and employee feedback to improve their own leadership effectiveness and the effectiveness of management throughout the organization?***

An ongoing review of key performance criteria and employee feedback is used to improve leadership and management effectiveness. Every few years, an extensive survey of our employees is undertaken that measures critical areas of leadership. This survey was not conducted last year due to several organizational changes and other factors but a survey should be conducted in the coming year to determine any strengths and weaknesses of leadership.

***◆How does the organization address the current and potential impact on the public of its products, programs, services, facilities and operations, including associated risks?***

PSA depends on feedback from its advisory system, a close working relationship with local and state elected officials and state and federal agency heads to monitor the impact of programs. Consensus building and broad based public relations activities precede the introduction of new programs in the state, in addition to the more formal review of new programs by the Merit review committee and the peer review of new research projects.

In addition, customer satisfaction surveys are conducted regularly and are detailed in Category 3-Customer Focus. These surveys along with more informal information gathering techniques provide a continual source of feedback. This feedback is used to address the current and potential impact of PSA activities on the public.

**◆How does senior leadership set and communicate key organizational priorities for improvement?**

The assessment process which is reported in the USDA Plan of Work, the Annual Report to the SC Budget and Control Board and the Annual report to the Southern Association of Colleges and Schools (SACS) assist the PSA Associate Deans and Directors and the PSA Council to gauge areas which merit the most effort for improvement.

Priorities are communicated throughout the organization to their respective faculty and staff. Priorities are communicated to Clemson University through the Vice President's participation in the university Administrative Council, vice presidential meetings and in exchanges with the President and key members of the President's staff and the staff of the vice presidents. The latest technologies are also employed to enhance communications capabilities, to include e-mail, teleconferencing via satellite and the internet and on the PSA web sites. Legislators are advised of priorities by the staff in the University's Columbia office.

**◆How does senior leadership actively support and strengthen the community?**

The intent of the mission of PSA is to help people in South Carolina make informed decisions which will improve their lives and the communities where they live. PSA accomplishes this mission by developing new knowledge through research and transferring this knowledge to the citizens of the state through a range of educational techniques.

In reality, this is one of the primary missions of the PSA. With offices in every county, Extension agents working with stakeholders all over the state and research facilities in key agricultural areas of the state, PSA is constantly involved with community activities and growth.

## **Category 2 - Strategic Planning**

**◆What is your Strategic Planning process, including KEY participants, and how does it account for...?**

PSA is committed to taking a leadership role in addressing challenges and realizing opportunities in South Carolina. PSA is poised for the future with its five strategic goals aimed at meeting the needs of South Carolina citizens and achieving the highest levels of scholarly excellence in research, outreach, and service. These goals are compatible with the Clemson University goals and emphasis areas.

**◆What are your key strategic Objectives?**

The PSA units collectively provide input to the strategic planning process. In addition, the strategic planning takes place within these units with a focus on what is best for PSA, Clemson University and the state of South Carolina. Key issues addressed include: recognition and clarification of mission, environmental scanning, identification and selection of issues, development of goals, and strategies, implementation of plans and monitoring and assessment of results (see Strategic Planning Chart for list).



***◆How do you develop and track action plans that address your key strategic objectives?***

Stakeholder input remains critical to the strategic planning process and, as such, input is sought from a variety of stakeholders - an information team collects relevant data via interviews, surveys, and personal contacts. Nominal group technique is also used at the county level to garner stakeholder input.

Demographic data from all the counties through an environmental scan was also conducted. Customer needs, financial, societal and other risks, human resource capabilities and needs, operational capabilities and needs, and suppliers, contractors, partners' capabilities and needs, were all considered in the planning process.

***◆How do you communicate and deploy your strategic objectives, action plans and performance measures?***

The success of programs, projects, and services, to a great extent, depends on the ability of employees to do the job and the extent to which they are up-to-date on the subject matter. PSA's goal is to enhance the human resources by aggressively hiring outstanding faculty, researchers, agents, and support staff; invest in their professional development, and provide a supportive work environment. Several training and professional development opportunities are available to employees to improve their skills. The heads of PSA's seven units annually review the needs of each employee and then identify professional development opportunities for them.

***◆If the agency's strategic plan is available to the public through the agency's internet homepage; please provide an address for that plan on the website?***

Currently, the strategic plan is not available to the public through the agency's internet homepage. The PSA homepage is in the process of being redesigned and is only displaying a limited amount of information. The new design will allow for the public and employee to easily see our organization's strategic plan and various performance measures.



◆Strategic Planning Chart

**Strategic Planning**

Program Number and Title	Supported Agency Strategic Planning Goal/Objective	Related FY 03-04 Key Agency Action Plan/Initiative(s)	Key Cross References for Performance Measures*
	Agrisystems Productivity and Profitability	Sustainable Agricultural Production Systems; Sustainable Forestry Management and Environmental Enhancement; Integrated Pest Management; Risk Management for Agricultural Firms; Agricultural Biotechnology; Plant and Seed Certification	Section 3, Category 2
	Economic and Community Development	Community Leadership and Economic Development; Bioengineering Alliance; The SC Institute for Energy Studies; Distance Education	Section 3, Category 2
	Environmental Conservation	Natural Resources and Environmental Research and Education; household and structural pest training; Environmental Horticulture Education; Reducing the Impact of Animal Agriculture on the Environment; Agricultural Biosecurity; Pesticide Regulation;	Section 3, Category 2
	Food Safety and Nutrition	Meat Inspection; Animal Health and Diagnostic Laboratory; Food Safety and Nutrition; Agro Medicine	Section 3, Category 2
	Youth Development	4-H and Agricultural and Natural Resource Programs for Youth; Agricultural Education Teacher's Salaries	Section 3, Category 2

\* Key Cross-References are a link to the Category 7 - Business Results. These References provide a Chart number that is included in the 7th section of this document.

**Category 3 - Customer Focus**

PSA's key customers and stakeholders are the citizens of South Carolina. Included among them are South Carolina growers or any plant or animal commodity, citizens, consumers, government agencies, other universities, gardeners, youth, agribusiness, businesses and persons relating to any context of our research education and regulatory functions to include, commodity groups, residents of communities, cities, and rural areas. Included also are legislators, alumni, families, meat packing establishments, agri-chemical users, unidentified users of PSA electronic printed, and broadcast information, and people who support the wide range of PSA units and their program activities.

***◆How do you determine who your customers are and what are their key requirements are?***

Contact data identifies customers and their needs. In FY 2003-04, more than 600,000 people in South Carolina were contacted by the PSA units to determine their requirements. They represent a variety of people from all walks of life. These people are integral to programs and initiatives and provide valuable feedback performance. A majority of these contacts were programmatic, meaning that customers came to programs or submitted requests to receive information based on an identified need. Telephone calls, office visits, farm and home visits, participation in workshops, demonstrations, and seminars are some of the methods employed to provide information and at the same time determine customer's needs and wants. In addition, print media such as brochures, pamphlets and, how-to-do guide books have also been published and distributed to the customers. Many needs are defined by mandated health requirements.

When a research need is identified, such as the appearance of a new pest or disease, a critical social or environmental phenomena or a production concern, the customers that have the information need are contacted and the problems are discussed along with potential methods of obtaining the information that is needed to solve them. Proposals show them our capacity and how we are able to meet their needs.

***◆How do you keep your listening and learning methods current with changing customer/business needs?***

The annual nature of surveys and contact data gathering, coupled with the fact PSA has at least one service unit in each county of the state makes it possible to constantly assess the validity and strength of listening and learning methods. The staff at the local level is in constant contact with state legislators, local elected officials and citizens who are served daily, which reinforces the annual approaches. The unanticipated occurrence of new diseases such as West Nile Virus which impacts birds, animals and humans, plant pests, such as Tropical Soda apple which impacts pasture land and the environment or Plum Pox disease, which impacts peach production, keys the various units in PSA to respond in a coordinated fashion with customers. The recent drought effects all South Carolina residents but in different ways, and calls for regional responses to special needs from PSA.

The potential threat of bio-terrorism sets a different series of processes in motion which mobilizes elements of all PSA units into a coordinated effort with the relevant agencies in state and federal governments.

***◆How do you use information from customers/ stakeholders to keep services or programs relevant and provide for continues improvement?***

Periodic meetings with advisory boards, local leaders, and other stakeholders along with focus groups, provide feedback on how programs and initiatives are meeting their needs. Information gathered from meetings and from periodic survey instruments is conveyed to the PSA Directors and the PSA Council members for review and recommendations for faculty and staff in the various PSA units. Advisory Boards have played a significant role in providing input and feedback which has been used to improve both services and programs.

***◆How do you measure customer/stakeholder satisfaction?***

PSA has a plan to measure the quality of services provided in all the 46 counties of the state. Part of this plan involves a customer satisfaction survey (CSS) which has been developed to collect data from the customers. The goal of CSS is to find ways to improve program quality, information delivery, and more important, to assist in the accountability process. Four indicators were identified to assess the quality and satisfaction of services provided. These include: 1) up-to-date, useful, relevant and easy to understand information, 2) the extent to which recipients had the opportunity to use the information, 3) the extent to which they have shared the information with others, and 4) the extent to which they are satisfied with the services provided. The following success criteria was also established: 1) 80% of the survey participants will report positively to all the questions, 2) 50% will report that they have used information, 3) 70% will report that they have shared extension information with their friends and neighbors, and 4) 80% will report that they are satisfied with the services provided.

Forty-one of the 46 counties participated in the survey. A team comprised of extension agents, county extension directors, and secretarial staff conducted over 1,142 interviews with customers to collect data. These 1,142 responded to 14 questions covering the four criteria indicated above. The results of CSS have been used by county staff in budget decisions, in showcasing program accomplishments and in meetings with legislative officials. Such use has shown that Extension can make a difference.

***◆How do you build positive relationships with customers and stakeholders? Indicate any key distinctions between different customer groups.***

Daily interaction, made possible by the location of PSA resources and personnel in every county, coupled with the delivery of information that is accurate, timely and usable are the keys to positive relationships with customers and stakeholders. Industries, large business operations and local governments require different levels of assistance than many citizens who have a very specific need.

***Category 4 – Measurement, Analysis, and Knowledge Management***

PSA has one of the best information systems of the land-grant colleges in CU-AIMS – Clemson University Activity Information Management Systems. CU-AIMS collects data from many sources and summarizes the data in such a way that allows the administration to be understand the complexities of the organization. Although the system is still evolving, CU-AIMS is able to collect all financial data from the University's financial

*Clemson University Public Service Activities Accountability Report 2003-2004*  
systems, performance data from PSA's own performance tracking system for Extension Activities and from the system for tracking faculty performance, and data from several federal data sources which track research activities.

***◆How do you decide operations, processes and systems to measure for tracking financial and operational performance?***

All programming must fit within the five PSA goals as well as meet the goals/objectives of the individual units within PSA and the university goals/emphasis areas. These units have their own established process to determine their success in addressing the needs of their customers/stakeholders. This process could be peer review committees, focus groups, surveys, and personal contacts. Decisions are made that guide the units in directions that focus their programming on relevance, capacity and impact.

The PSA Directors and the PSA Council determine activities which will be measured. PSA has implemented a system-wide accountability system called CU-AIMS (Clemson University Activity Information System) that looks at all aspects of the organization. This system measures program activities and provides information to the various units in the organization for assessment and management purposes.

***◆What are your key measures?***

Our key measures are basically those used by the University to compare and rate the performance of all identities within the University. With the increased emphasis by the University to collect outside funding, many of our key measures deal with the various ways in which we collect non-state supported funds such as (1) sponsored research; (2) gifts and pledges; (3) revenue producing activities; and (4) collaborative efforts with other institutions or federal and state agencies.

***◆How do you ensure data integrity, timeliness, accuracy, security and availability for decision-making?***

CUAIMS takes data from numerous sources and delivers it to three levels of PSA: the stakeholders, the users, and the decision makers. The stakeholders are informed of activities within PSA through the web-based system called "South Carolina Growing". This system shows the general public, legislature, media, scientists, and other interested parties the current problem-areas being addressed by PSA, the solutions being discovered the information being disseminated from these discoveries, and the areas that PSA will be targeting in the future. By informing the public PSA encourages feedback from stakeholders to insure that working is underway in the correct areas and addressing the critical needs and delivering the proper information.

The Professional Home Page (PHP) component of CU-AIMS is the connection to the expertise within PSA i.e. the scientists, the technicians, the staff, and other professionals that make it possible to solve the problems and deliver the information to stakeholders. By keeping them informed PSA can further insure that they know what is being asked of them (through performance measurement subsystems), and showing them what their colleagues are doing (encouraging collaborative efforts), and giving them a process to communicate with the

*Clemson University Public Service Activities Accountability Report 2003-2004*  
administration any discrepancies or misrepresentation of the data (electronic report transfer).

The final component of CU-AIMS is the Information Management System. It is the umbrella or the “core” of CU-AIMS. This is where all the data is stored and delivered to the administration. This system does high-level analysis of how the organization is working. It looks at spending trends, performance measurement, time analysis, account discrepancies, goal progress, and market analysis. This is the true decision making tool for the administration.

***◆How do you use data/information analysis to provide effective support for decision-making?***

Data gathered by CUMIS (Clemson University Management Information System) is combined with data received from various survey instruments, advisory board sessions and CUAIMS is available to the PSA Directors, the PSA Council and to unit directors. Special reports are developed from CUMIS and CUAIMS on request from the Directors and the Council. The Chief Financial Officer also prepares special reports at the request of the Directors and the Council

***◆How do you select and use comparative data and information?***

CUAIMS brings in information from all aspects of PSA. Much of this data is grouped into predefined areas that allows for comparing performance between departments, or stations, or problem areas (programs) or between individuals. These predefined areas have certain criteria or performance measures that can allow for these comparisons to be made.

Because CU-AIMS connect to numerous data sources, comparisons can be made between Clemson and with other “like” institutions across the country. This not only makes it possible to gauge performance (performance measures) but also presents opportunities to collaborate efforts with other institutions. Once CUAIMS connects to commodity databases within the state, it will be possible to compare PSA efforts to those of industry.

***◆How do you manage organizational knowledge to accomplish the collection and transfer and maintenance of accumulated employee knowledge, and identification and sharing of best practices?***

Our information systems (CUAIMS, CUMIS, etc) are designed to transfer data to anyone requesting information. That means our own staff, faculty and administrators as well as the general public. Currently, we are in the process of redesigning all our systems to better ensure that we collected the types of information needed by our organization and our employees as well as our stakeholders.

### **Category 5 - Human Resources**

Public Service Activities Business Services works together with Clemson University Human Resources for all PSA employees. Many human resource activities which once were administered by PSA are now transferred to the university’s central office of Human Resources. The university’s office is much better qualified to work with our employees on personnel issues. PSA still maintains an office of Staff Development that insures personnel are better trained to meet the needs of their profession.

**◆How do you and your managers/supervisors encourage and motivate employees (formally and/or informally) to develop and utilize their full potential?**

Employees are encouraged and motivated to develop and utilize their full potential through the following university policy of allowing employees to take time off to attend Clemson University courses:

*“Effective planning using the Employee Personnel Management System can encourage employees to develop their skills and abilities and by providing opportunities for employees to continue their education, at little or no cost.”*

PSA has a number of incentive and awards programs to support the employees within the system. The organization has the standard performance incentive raises. However, an innovative Distinguished Agent position was created which is reserved only for those agents who perform at the highest level. Each professional organization that is tied to Extension, such as: the County Agricultural Agents, Family and Consumer Sciences Agents, 4-H Agents, Extension Secretaries, and Epsilon Sigma Phi, have awards programs to promote excellence in programming efforts. Three Superior Performance Awards are sponsored for agents and faculty as is an Outstanding Service Award for classified staff. In addition, the Clemson University Alumni Association sponsors the Distinguished Service Award each year for excellence in Public Service.

**◆How do you identify and address key developmental and training needs, including job skills training, performance excellence training, diversity training, management/leadership development, new employee orientation and safety training?**

The Office of Human Resources conducts a training needs-assessment survey designed for each University unit. From the information gathered, sessions are scheduled to meet the needs of the unit. OSHA training is done in accordance with regulations. New employee orientation is not mandatory at Clemson; however, each new staff member is invited to attend. All day sessions are held on the 1st and 2nd payday of each month.

PSA provides an in-service training program for all employees. The training is divided into three categories: Subject Matter; Professional Development (which includes Orientation); and Technology. Extension specialists and initiative teams develop subject matter trainings each year and provide to agents to keep them up-to-date in the various program areas. A variety of Professional Development trainings are offered each year covering such topics as Grant Writing, Diversity, Developing Partnerships, Developing Survey Instruments, etc. An orientation program is in place which includes an introduction to the Cooperative Extension Service and additional trainings in Civil Rights and Program Development. Technology trainings are offered which cover the use of several computer programs. In addition, the Professional Associations associated with PSA also offer trainings and updates both at the state and national levels.



***◆How does your employee performance management system, including feedback to and from employees, support high performance?***

The Office of Human Resources communicates expectations during the planning phase of the process - employees are allowed input into formulating the planning stage. The ratings allowed by policy in the evaluation phase include not only one for meeting the expectations, but also one for exceeding and one for substantially exceeding. The possibility of achieving a higher rating for work that is accomplished encourages performing at a higher level. Performance pay is also tied to the EPMS - can be an incentive for higher level performance; and support of the President's University Goals as a way in part of becoming one of the Nation's top twenty public universities increases awareness of a Mission above an individual's daily duties - supporting higher performance than usual. Each employee chooses one of the Goals to be included as part of their evaluation document.

Formal written performance evaluations and interviews conducted with each faculty member to review accomplishments, weaknesses, and areas needing improvement. This information is utilized in determining the annual goals and objectives for the plan of work developed by each faculty member.

***◆What formal and/or informal assessment methods and measures do you use to determine employee well being, satisfaction, and motivation?***

Units periodically review well being, to include work level and schedule, satisfaction and expectations with personnel. Efforts are made to insure that supervisors are available to discuss issues with subordinates. Employees are encouraged to make suggestions for improvements

***◆How do you maintain a safe and healthy work environment?***

The Office of Human Resources ensures compliance with the Drug Free Work Force Act by annual distribution and enforcement of the Employee Drug and Alcohol policy; compliance with the DOT regulations governing training and drug testing of employees who are required to have a commercial driver's license (CDL). (Partnership stated under the first question of the assistance provided to employees in obtaining a license after requirement has been added to an existing position.) The University Smoking Policy is in compliance with the SC Clean Indoor Air Act; Training provided annually on causes and symptoms of violence in the workplace; Employee Assistance Program provides confidential assistance/referral for employees experiencing difficulties in coping in a variety of life/work situations. (The intent of the program is to enable them to return to a more productive employee).

The University and PSA focus on encouraging safe work environment/habits. Ergonomics specialists on staff will provide recommendations for improving workstations, etc; and the University Wellness Center provides health programs and services at little or no cost to employees. These programs include in part recommendations for weight loss, improving diet and lifestyle changes.

Individual PSA units have a variety of complementary approaches in the safety area to include training in pesticide management for employees, safety

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compliance officers who stress safety in laboratory areas and regular inspections of facilities and equipment.

Employees are monitored to insure that all safety measures are followed.

Employees that become aware of a potential safety problem or area in need of attention are encouraged to report the need to their supervisor.

***◆What activities are employees involved with that make a positive contribution to the community?***

PSA engages the community through partnerships, collaborations, and through many outreach efforts. Off campus and university faculty and staff are encouraged to involve themselves in community activities. Personnel serve as members and officers in numerous leadership and civic organizations. Several employees are involved in their local school system, serving as members of the school board. Participation in these type activities shows the commitment of PSA personnel to their community. PSA has projects address: community volunteerism, educational improvement, civic engagement and environmental quality. PSA has developed formal networks with civic associations, volunteer training initiatives, private companies and governmental organizations.

**Category 6 - Process Management**

Because of the complexity of our mission, PSA utilizes many instruments to insure that our divisions and representatives are working together to deliver our services. Our reliance on our own mission and objectives, our close contact with our customers and stakeholders and the commitment of our employees insures that we work together to accomplish this.

***◆What are your key processes that produce, create or add value to your customers and your organization, and how do they contribute to success?***

The design of program initiatives is built around three primary criteria, relevance, capacity and impact. Needs assessments are targeted towards the customer base and systematically updated. Advisory boards with a broad cross section of members are asked to assess and provide input to the PSA Associate Deans, Directors and PSA Council on the design of program initiatives and the delivery of services. Each unit within PSA is directly involved in service delivery unique to its own specific mission. The design of the delivery systems is constantly being impacted by increased demand for services, new types of services, and new means of service delivery. Budgetary constraints directly impact the ability of PSA to respond to changing customer needs. Remote delivery of service using Internet technology, satellite, two-way video, and radio are examples of innovative approaches to service delivery.

***◆How do you incorporate organizational knowledge, new technology, changing customer and mission-related requirements, cost controls, and other efficiency and effectiveness factors into process design and delivery?***

The design and delivery of all PSA programs is built around achieving the objectives in the five PSA goals. Decisions are made in the design stage to focus research initiatives on the established goals. Spontaneous demand for service from customers is assessed in terms of PSA's ability to deliver the service within the context of the five PSA goals. In instances where the service request is beyond PSA's capabilities, mission or outside a goal area, efforts are



*Clemson University Public Service Activities Accountability Report 2003-2004* made to refer the customer to other agencies, state or federal or two other land grant universities, with different specialties.

***◆How does your day-to-day operation of these processes ensure meeting key performance requirements?***

Communications is a key support process in the design, production and delivery of products to customers. PSA has a communications center, web page authoring and management staff, radio station, publications and graphics capabilities two-way video and satellite facilities, a broad base of computer support, and access on a reimbursement basis to a range of communications support from Clemson University. Facilities adjacent to the university and at strategic locations across the state (at least one facility in each county) are maintained and supported by the Farm Research Services unit adjacent to the campus with specific support functions housed at each installation. PSA staff are responsible for the maintenance of computers, diagnostic and research equipment as well as vehicles, buildings and grounds. Maintenance can also be done either on a contractual basis with the university or an outside vendor. Personnel and property management are conducted internally. Legal, land management, computer, janitorial and legislative support services are shared with the university, funded by PSA at negotiated levels.

***◆What are your key support processes and how do you improve and update these processes to achieve better performance?***

As has been stated previously, communication and feedback from our staff and suppliers has been the key to achieve better performance. Statewide, regional and national meetings are frequently initiated or attended by key individuals in our organization to ensure the efforts among our suppliers and our own organization are coordinated in ensure duplication of effort is minimized and that cooperation of effort is maximized.

***◆How do you manage and support your key supplier/contractor/partner interactions and processes to improve performance?***

The primary suppliers for PSA are the federal and state government, companies, organizations, foundations and communities that invest funds in PSA. Interactions with suppliers, contractors and partners are carried out through visits, correspondence, periodic reporting and annual reporting as represented by this document. Quality outputs and outcomes, coupled with documented customer satisfaction that are shared with suppliers, contractors and partners on a timely basis, generates valuable inputs that are used to improve performance. Advisory boards and groups are also apprised of comments from these interactions and suggestions for improving performance are generated.

### **Category 7 - Results**

PSA is all about “service”. We generate and transfer knowledge through research and education. If we are not serving our customers and stakeholders well, we are not doing our job. Our primary deliverable is information. Whether the need is for a farmer in a rural county, the housewife, the researcher, an industry leader in the state, a member of the legislature, or a colleague in another state or across the world, PSA should be able to help them.

***◆What are your performance levels and trends for the key measures of customer satisfaction?***

PSA is interested in enhancing the quality of the information and services it provides to customers, while expanding or at least maintaining the numbers of customers served and enhancing the quality at the same time. Performance levels to date indicate that PSA is successful in providing educational programs, research initiatives and regulatory services which benefit the citizens of South Carolina and leaves with the recipient the view that they have benefited. Continuing to achieve this goal is becoming increasingly problematic in an era of decreasing budgets. PSA plans to increase customer satisfaction by achieving even more desirable performance levels through an expansion of a trend towards electronic mediums to meet customer needs and achieve customer satisfaction, and through a restructuring of primary components of the PSA delivery system.

PSA has developed a sophisticated, multi-part model for measuring customer satisfaction and this is described in Section III Customer Focus. .

***◆What are your performance levels and trends for the key measures of mission accomplishment and organizational effectiveness?***

PSA has restructured to increase the focus on the five PSA goal areas, assigning an Associate Dean to focus on each goal area which in turn works with the university and within emphasis areas. This has had the effect of increasing performance in the areas and improving reporting. As the Associate Deans continue with their efforts and as PSA moves towards programs it is anticipated that the trend will be towards increased performance in each goal area.

***◆What are your performance levels for the key measures of financial performance?***

The impact of budget reductions and retirements and subsequent restructuring has challenged PSA employees to take on additional and often time more complex responsibilities. PSA employees have responded positively in this rapidly changing environment and PSA will increase opportunities for employee involvement and is refocusing efforts to provide professional development and training opportunities.

***◆What are your performance levels and trends for the key measures of Human Resource Results?***

Outside funding for PSA activities have increased dramatically over the last year. This reflects increasing confidence on the part of federal, state and private partners in PSA's ability to provide research, education and regulatory programs. Increased partnering with outside funding agencies, organizations and companies is necessitated by the declining state budget situation and the university goal of increasing overall research funding. The trend towards increasing collaboration with partners is expected to increase.

There has been a dramatic increase in activity on the regulatory side of PSA in response in the areas of bio security, food safety and security and the threat of

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diseases resulting from the increasing terrorist activities. There has been increased coordination with state and federal agencies to coordinate response scenarios and these close working relationships are anticipated to continue and become more sophisticated. The security of the food supply and the ability to respond to threats to human life, livestock, air and water quality will become increasing important elements of the overall PSA thrust in South Carolina.

PSA has systematically undergone a series of funding reallocations, budget reductions and faculty and staff reassignments with the long-term goal of capitalizing on state and federal funding and leveraging private funds to achieve the organizations five goals and complement the university's goals and emphasis areas. Increasing the return on the dollar while not compromising the unbiased nature of the information and services which are provided, is a top financial priority. PSA employees and those in leadership positions are going to extraordinary lengths to maintain, refine, and when possible expand the levels and quality of activities provided across the state. Budget reductions which cannot be offset by outside funding are requiring shifts in program emphasis, the elimination of some activities and new approaches to program delivery. The trend of positive, innovative responses and the concern of PSA staff and leadership to meet needs in the state and meet both the PSA and university goals are anticipated to continue.

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## Addendum - Additional Accomplishments

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### **Extension Service**

#### **Sustainable Forest Management and Environmental Enhancement**

- 13 Master Tree Farmer/Master Woodland Owner Programs – 138 persons attended and 116 increased knowledge; 80% of those who increased knowledge adopted practices.
- 14 participants who completed the Master Tree Farmer course owned 3,146 acres of land, of which 2,750 acres were forest land. These participants indicated that the knowledge gained would help them save \$158,000 and earn \$332,000 in the future in forestry activities on their land.
- 86 Forest Resource Management Programs – 1,727 persons attended and 1,114 increased knowledge; 54% of those who increased knowledge adopted practices.

#### **Risk Management Systems for Agricultural Firms**

- 51 programs were held on Agricultural Market Risk Management reaching 1,400 persons, 31 programs on Economic Analysis of Enterprises and Technologies reached 469 persons, and 13 programs in Business Systems and Financial Risk Management reached 277 persons. Of the 2,158 people participating 1,817 reported an increase in knowledge. The total gross farm income of participants in programs was over \$5 million. The total income of firms affected was almost \$3 million.

### **Sustainable Agricultural Production Systems**

- Over 800 programs were conducted reaching over 30,000 in projects such as Animal Production Systems, Integrated Crop Management for Horticultural and Agronomic Crops, Organic Production Systems, and Farm Safety.
- Approximately 400,000 acres were affected by ICM programs and activities.
- 30 producers improved breeding program by utilizing sire selection/proper breed complementation and/or adopting improved health and reproduction programs.

### **4-H, Youth and**

- Over 3,000 programs were conducted reaching over 65,000 people, with assistance from over 2,000 volunteers.
- 143 Teaching SMART Programs – 5,061 persons attended and 5,011 increased knowledge; 93% of those who increased knowledge adopted practices.
- 32 Teaching Kids about the Environment (Teaching KATE) – 2,056 people attended programs.
- 415 Youth Learning Institute Camping programs were conducted for 15,000 people.
- Over 20,000 persons were reached through mass media for Building Family Strengths for Later Life.
- Over 113,700 were reached through mass media for BFS, A Youth Development Approach.
- 162 people participated in Conflict Resolution/Anger Management Programs.
- 127 persons participated in BFS Train-the-Trainer programs.
- 80 Financial Security and Stability educational programs
- 120 people reported that they initiated or increased contributions to a savings plan for retirement or future income needs.
- 357 participants engaged in the High School Financial Planning Program.
- Over 200 persons engaged in activities which increased their financial literacy related to later life issues.
- 513 Citizenship/Civic Education programs for youth were conducted.
- 429 Children and Youth at Risk Programs were conducted.
- 2,064 other 4-H and Youth educational programs were conducted.
- 553 FCL volunteers conducted programs with other groups, reaching over 6,785 persons. Volunteers contributed over 1,300 hours of time and over \$7,000 of in-kind donations.

### **Natural Resources and the Environment**

- A total of 741 programs were conducted reaching over 10,300 persons.
- 18 of these were Master Wildlifer programs – 520 persons attended; 98% of those who increased knowledge adopted practices.
- 495 water quality and quantity programs were conducted for over 6,000 people

### **Household and Structural Pest Control and Pesticide Training**

- A total of 190 pesticide safety education and training programs were conducted. Of this number 85 pesticide programs were conducted reaching 1,800 SC applicators for new or renewed certification.

### **Integrated Pest Management**

- 82 federally funded Integrated Pest Management programs were conducted.
- 1,505 acres of collards and 289 acres of cotton were affected by IPM methods.
- 45 confined Animal Manure Managers Programs were conducted for 1,756 people. Of those gaining knowledge, 77% reported adopting recommended practices.

### **Reducing the Impact of Animal Agriculture on the Environment**

- 45 programs were conducted reaching over 1,700 people.

### **Environmental Horticulture Education-**

- 415 Master Gardener programs and projects were conducted. 1,782 persons were trained to become Master Gardeners. 2,902 MG's reported conducting activities in which they contributed over 38,000 hours of service.
- Over 25,600 consumers received environmental horticulture information through Urban Horticulture Center, Home & Garden Info Center, PAWS Horticulture Hotline.

### **Food Safety and Nutrition –**

- 483 general food and nutrition programs
- 61 programs in food safety from farm to processing
- 451 supervisors/food handlers completed educational program and received ServSafe Course certificate.
- 513 participants were reached with food safety information by volunteers who participated in an Extension training program.
- 22 facilities met HACCP standards for food safety.
- 165 new or improved food products entered the market as a result of adopting recommended practices.
- 1,799 minutes of airtime-radio for food programs.
- 415 press kits were distributed
- 14,046 column inches appeared in printed media for food programs.
- 628 minutes of TV airtime were broadcasted.
- Over 1,460 hours were contributed by volunteers to adult EFNEP program. Over 1,474 EFNEP adults were reached by volunteers.
- 1,110 hours were contributed by volunteers to the adult LINC program.

### **Community, Leadership and Economic Development**

- A total of 910 programs reached over 13,000 people.
- 2,550 Lifelong Improvement in Nutrition and Community (LINC) programs for adults
- 910 Educational programs in community, leadership, and economic development, including Palmetto Leadership. Other accomplishments in this area include:
  - 766 of the individuals who completed leadership programs collaborated with others in the region to address an issue or concern.
  - 548 board members were trained.
  - 502 youth engaged in Intergenerational Service-learning or Community Development projects

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- 326 adults engaged in Intergenerational Service-learning or Community Development projects
- 362 community leaders participated in Business Retention and Enterprise program task groups.
- 28 collaborative efforts were conducted to enhance BR&E.
- 24 facilitated public meetings were conducted to address public issues.
- 21 National Issues Forums were convened or moderated.
- 309 groups or agencies collaborated on a task group.
- Over \$28,772 was raised to support local programs and collaborative efforts.

### **Veterinary Diagnostic Laboratory**

- Possession of AAVLD laboratory accreditation and all proficiency testing certificates as of June 30, 2004.
- Service requests for testing essential to the shipment of animals and products across state or international lines are processed in an accurate and timely manner, and laboratory reports are received by clients expeditiously. No essential services are eliminated as a result of any loss of appropriations or staff.
- Immunohistochemical testing implemented for intermediate filament and melanin staining. PCR testing implemented for avian and mammalian mycoplasmosis and eastern equine encephalitis virus.
- Personnel have been hired, and equipment and supplies procured for molecular-based diagnostic testing. PCR testing for Avian Influenza, Exotic Newcastle Disease, Eastern Equine Encephalitis, and West Nile Encephalitis have been implemented. Immunohistochemical testing has not been implemented due to critical staffing shortages in the pathology section of the laboratory.
- A virologist has been hired to meet the demand for molecular-based diagnostic testing services.

### **Animal Health Programs**

- Disease Free Status by USDA/APHIS/VS maintained for cattle brucellosis, swine brucellosis, classical swine fever, pseudorabies, tuberculosis, and pullorum-typhoid.
- Monitored for significant poultry diseases in South Carolina through testing commercial and backyard poultry flocks on farms, sales and shows.
- Monitor environmental testing of *Salmonella enteritidis* (SE) in commercial table egg layer houses. Follow up on SE (egg related) food-borne outbreaks in which the eggs originated from South Carolina layer farms.
- Information on SE monitoring presented to the South Carolina egg producers, FDA (Columbia & Atlanta, GA offices), and DHEC during our South Carolina Egg Quality Assurance Program meetings. There were no SE (egg-related) food-borne outbreaks in which eggs originated from South Carolina layer farms.
- Monitor and records checks at Equine Sales Facilities (ESF's). Continue Equine Event Permits (138 in 2002-03)
- All ESF's records checked quarterly. Continued small numbers of noncompliance cases on EIA documents. (<10 court cases in 2002-2003).
  - A. Record Checks at Equine Sales Facilities: 28
  - B. Prosecution of EUA Law violations: 22
  - C. Investigate CVI's w/o EIA negative test or out-of-date test: 27

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- Multi-agency radiation and animal decontamination training and hands-on exercise for CULPH and CUCES (10/03).
- Finalized 2003 Homeland Security SLED \$30K grant to obtain laboratory ELISA (biological) Reader, Meat Inspection light meters, pet washers, electric pressure washer and PPE (PAPRs, escape hoods).
- Obtained 2004 Homeland Security SLED \$449K grant to equip and train state plant and animal agriculture response teams
- Establish GIS server.
- Using microbial testing of product contact surfaces and ready-to-eat items, determine that surfaces and products are not contaminated with *Listeria monocytogenes*.
- A model standard operating procedure (SOP), entitled “Control of *Listeria monocytogenes* in Ready-To-Eat Meat and Poultry Products Standard Operating Procedures” was developed to assist official establishments in complying with the new federal regulations. Further a binder entitled “*Listeria* Control Book” was prepared for each plant that contained all the associated documents needed to implement the new SOP. Five (5) briefings were conducted through the state for plan management and inspection personnel to explain the new requirement and the details of the SOP.
- Since implementation of the new SOP, two rounds of sampling product contact surfaces of equipment used to produce ready-to-eat products has been completed.
- Activity level indicator:
  - Cattle Brucellosis (livestock & slaughter testing) 8079
  - Swine Brucellosis (livestock & slaughter testing) 24,537
  - Other Brucellosis testing 441
  - Classical Swine Fever 240
  - Swine Pseudorabies 13,875
  - Poultry Pullorum-Typhoid 13,890
  - Incoming CVI's reviewed (paper) 4318 # cert.
  - Incoming CVI's reviewed (electronic) 240 # cert. 9424 # units
  - Permits issued (incoming swine & poultry) 886
  - FAD Investigations
  - Quarantines (Total) 26
  - Livestock Market day of sale surveillance 458
  - Farm visits, investigations, contacts, etc. 256

### **Poultry Health Programs**

Monitor for significant poultry diseases in South Carolina.

- Activity level indicator:
  - Certified SC National Poultry Improvement Plan testers, # new testers 21
  - Training in NPIP & Small Flock Certification Program. # total 183
  - Certified NPIP Pullorum-Typhoid Clean (exhibition breeders)# Flocks 25
  - # Birds 10,485
  - Certified NPIP Mycoplasma gallisepticum/synoviae Clean # Flocks 16
  - # Birds 501,850
  - Certified NPIP Avian Influenza Clean exhibition breeders # Flocks 1
  - # Birds 279

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- Obtained USDA Cooperative Grant for \$100,000 from March 2004 – January 2005 to:
- Increase surveillance for Exotic Newcastle Disease, Avian Influenza and Pullorum-Typhoid by hiring 2 field personnel to test backyard poultry.
- Increase public awareness of these diseases through distributing educational material.
- Training laboratory personnel in recognition and identification of foreign animal diseases (FAD)

**Egg Quality Assurance Programs**

Monitor environmental testing of *Salmonella enteritidis* (SE) in commercial table egg layer houses.

- Activity level indicator:

**Commercial Table Egg Layer House SE Sampling:**

<b>FY</b>	<b>No. Swabs Tested</b>	<b>No. Swabs SE Positive</b>		<b>Total No. Layer Houses on Plan</b>	<b>No. Layer Houses Tested</b>		<b>No. Layer Houses Pos</b>	<b>No. Farms Tested</b>	<b>No. Layer Co. Tested</b>
03-04	53	0		31	10	(32%)	0	3	3
02-03	128	1	(0.8%)	29	21	(72%)	1 (5%)	3	3
01-02	48	0		23	8	(35%)	0	4	3
00-01	227	17	(7%)	60	38	(63%)	12 (31%)	15	5
99-00	161	4	(2%)	58	19	(33%)	3 (16%)	11	5
98-99	315	6	(2%)	58	33	(57%)	5 (15%)	13	5
97-98	190	0		60	14	(23%)	0	10	5

**Equine Programs**

Responsible for the following:

- A. Enforce EIA and other required equine health regulation in SC.
- B. Develop and carry out CULPH disease surveillance/response programs.
- C. Develop GIS Database of equine facilities and premises
- D. Develop an Equine ID recommendation and project for SC.

- Activity level indicator:
  - Record Checks at Equine Sales Facilities 28
  - Prosecution of EUA Law violations 22
  - Investigate CVI's without EIA negative test or out-of-date test 27

**State Level Animal Emergency Management Program**

Responsibilities include:

- Integrate appropriate support agency actions into the State Emergency Operations Plan, including Federal involvement.
- Provide information to state government and administrators concerning important perspectives of livestock, horses, wildlife and pets in the overall issues of emergency management.
- Develop two 3-man Animal Emergency Response Teams (including CULPHP and CU Extension personnel).



- Participate in Emergency Exercises. Hold annual ESF-17 workshop to review annex and update.
- Carry out training as planned with the DNR/National Guard/CULPH/CU Extension MOU on live-fire depopulation.
- Hold at least two HAZMAT training days for Response Teams.
- Provide at least two FAD training opportunities for Response Teams.
- Equip, fit and train Response Teams for PPE (personal protective equipment).
- Utilize GIS data to support planning/training/exercise in at least two exercises.

### **Animal Emergency Response Program**

Responsibilities include:

- Define responsibilities and protocols for each department of CULPH in ESF-17 activities.
- Organize projects suitable for grant proposals in order to fund program development.
- Serve as expert consultant for FAD/Bio-security planning and response.
- Coordinate risk assessment data from counties/industry/state agencies for delivery and use by State Contract Agency.
- Act as a follow-up agent to surveys with livestock, develop at least one livestock species farm site inspection/approval project per year.
- Develop Bio-security handbook draft, generic. Begin species specific additions to handbook.
- Develop at least through planning stage an Equine Identification project, based on disease control, emergency management needs, and movement requirements.
- Coordinate with the Equine Industry and identify project funding.
- Offer HAZMAT Training to interested Clemson Extension and CULPH personnel at the awareness level.
- Provide Personal Protective Equipment training and fitting for initial response teams (6-8 personnel).
- Set up GIS server and enter existing data (from USC Grant Project 2003) and become functional for emergency use of data.

### **Experiment Station**

- Researchers are seeking out new antimicrobials that can be used to control harmful microbes in foods and to look for DNA sequences that can be used to construct genetic transfer systems for gene delivery.
- Marination, irradiation and packaging systems will be examined for enhancing the safety and shelf life of raw and further processed poultry products.
- Food Safety can be enhanced by presenting information on the transmission of bacteria from surfaces to food consumers as safe food handling is supported by applied research results. These results from research will be useful in assessing the contribution of ceftiofur treatment of food animals to the acquisition and dissemination of ceftriaxone-resistant Salmonella, and the impact of antibiotic use on the microbiological safety of food.
- Research will identify harvesting and postharvest handling protocols and optimize the active principle content of medicinal plants that may be utilized as botanical dietary supplements or as functional foods. Such information is essential for the development of standards and regulations for the industry.

- When point or nonpoint source pollutants resulting from agricultural or urban activities enter soils and/or other subsurface systems, their concentrations can often be diminished by several naturally-occurring mechanisms including biological, physical, and/or chemical processes. It is necessary to gain a better understanding of the contribution made by abiotic electron-mediated reduction reactions in the overall natural attenuation of selected organic and inorganic point/nonpoint source pollutants.
- Diseases of bentgrass and ultradwarf bermudagrass greens and overseedings limit success culture for putting green use in the southeastern United States. Research will focus on determining the identification and best management of diseases of importance with the objective of limiting their damage to acceptable levels.
- Work is underway to learn more about the effective use of natural enemies by understanding their ecology and that of the target pests, their interactions with production practices, and the most effective means for utilizing them.
- Oak root rot disease is the single greatest soil-borne threat to the SC peach industry. Labor and production costs are increasing for peach growers. New systems and cultivars need to be developed to ensure grower profitability. Research to address this problem has three components: 1, to develop strategies to manage oak root rot disease in peach orchards; 2, to compare profitability of various orchard management systems; and 3, to evaluate new germplasm for the SC peach industry.
- Viral diseases of peaches, ornamentals, *Rubus* spp, and cucurbits (cantalopes) are causing significant economic losses in SC. Researchers are characterizing 'novel' viruses isolated from these crops. Data on the incidence of these previously uncharacterized viruses, and other characterized viruses that infect the crops, will be used to provide virus-tested sources of propagation material, to identify sources of infection, and to evaluate and implement IPM procedures for the control of these viral diseases.
- Research has quantified the carbon removed from the atmosphere by pine plantations growing on depleted Piedmont soils in SC. Plantations stored more than 90 tons/ha of atmospheric carbon in their biomass during their 50 years of growing and the soil accumulated 25 tons/ha of C. The research team was the first to demonstrate that decomposing root systems of harvested trees, carbon-rich sties in depleted Piedmont soils, help sustain productivity.
- A new publication "Life at the Water's Edge" a guide for water quality protection on lakeshores and streams was released.
- Scientists are examining the effect of tillage systems on pest management inputs
- Piercing/sucking insects are anticipated to be the major problem in Bollgard II cotton which adequately controls lepidopterous pests. It is thought that aphids may be a potential pest as Bollgard cotton varieties do not control them. Research will define treatment thresholds for piercing/sucking insect pests in Bollgard cotton and if aphids in fact cause economic yield loss in cotton.
- Small grain variety/strain performance is critical to an agricultural enterprise that uses small grains. An unbiased source of small grain variety/strain performance in S.C. is being developed for growers, seedsmen, and Extension personnel.
- Work is in progress to develop production systems and management practices that maintain or increase yields and fiber quality while increasing earliness and reducing production costs of South Carolina cotton producers.

**Regulatory and Public Service Programs**

- Regulatory and Public Service Programs maintains exceptional programs in groundwater monitoring; worker protection; pesticide container recycling; integrated pest management in public schools; witchweed and boll weevil eradication; and other invasive species programs.
- Administer genetic and quality standards for certification of seed and vegetatively propagated materials.
- Enforce detailed standards that help protect structures from wood destroying organisms, and help protect property and people from pesticide misuse.
- Inspect and certify the national and global movement of plant industry products meeting the requirements of states and most foreign countries' pest-free certification before nursery stock can be imported or exported.
- Types of measures and performance graphs:

Obj.	FY 2004 Type of Measure	FY 2004 Output
1	The percentage of fertilizer lots sampled that are found to be deficient in nutrient content. <b>Benchmark:</b> Maintain deficiency rate of less than 20% . <b>Result:</b> 16.74% = higher quality.	16.74%
2	The amount of fertilizer sampled as a percentage of the total fertilizer sold in SC. <b>Benchmark:</b> Sample at least 5% of the total tonnage sold. <b>Result:</b> 3.27% <b>Note:</b> benchmark not met this year due to concentration on raw material manufacturers' fertilizer.	3.27%
3	Seed lots (500 bushels or less) of seed production inspected for certification, and percentage of seed lots inspected that meet purity standards in laboratory tests. <b>Benchmark:</b> Maintain a minimum of 95% of all seed lots inspected meeting SC Certification standards for purity. <b>Result:</b> 100% compliance indicates effectiveness of inspections in ensuring that SC Certified seed meets high quality standards.	359 seed lots 100%
4	The number of inspections required in addition to certification inspections conducted to certify plant/commodity shipments (transplants, nursery stock, seed, lumber) intrastate, interstate, and globally. <b>Benchmark:</b> Respond to phytosanitary requests within one week timeframe and maintain an acceptance rate above 94%. <b>Result:</b> This certification fulfills certification requirements for shipment of these materials. Shipments enhance the marketing and profitability of SC agricultural business. No rejections from foreign countries of 462 federal phytosanitary certificates issued in FY 2004.	1747 inspections Compliance rate 100%
5	The number of inspections conducted of commercial greenhouses, nurseries, dealers, turf/sod farms and vegetable transplant producers for insect and disease detection. <b>Benchmark:</b> Conduct one inspection annually of each licensed nursery. Achieve a 95% compliance rate of nurseries meeting inspection criteria. <b>Result:</b> Plant material shipped and sold in SC and nationally is free of insects and disease. This enhances the horticultural industries (2 <sup>nd</sup> in cash receipts in SC) productivity and provides credibility to the industry and other states of our program.	1127 inspections compliance rate 99.7%
6	Invasive species surveys were conducted to detect/determine the presence of the invasive weeds Giant Salvinia in SC ponds and natural areas and Tropical Soda Apple in the state. <b>Benchmark:</b> Survey lower-state aquatic areas for Giant Salvinia, and survey TSA infested sites every six weeks from June 15 <sup>th</sup> to killing frost to prevent mature fruit production. <b>Result:</b> No Giant Salvinia found in SC's lower-state aquatic areas. Survey allows early detection and mitigation of new infestations. No TSA plants produced mature fruit at current infested sites. TSA populations are being reduced saving cattlemen and landowners thousands of dollars in production losses and control costs.	422 aquatic sites surveyed  9,172 TSA plants found and destroyed 2004
7	The number of inspections conducted to assure proper pesticide use. <b>Benchmark:</b> There will be over 2,000 inspections to ensure safe pesticide use and structural pest control compliance with pesticide labels, state and federal law. <b>Result:</b> These inspections protect the environmental resources of South Carolina from the effects of pesticide misuse. They also protect consumers and their property from harm due to fraud and incompetence in the pesticide-application industry.	2,230 complaint and compliance-assistance inspections by DPR
8	The number of pounds of pesticide containers recycled. <b>Benchmark:</b> Over 100,000 pounds of pesticide container plastic will be recycled. <b>Result:</b> The number of containers available for recycling has been declining steadily for the last few years. Part of this is due to the increasing dominance of "mini-bulk " and other returnable containers in agriculture.	175,000 lbs of pesticide containers recycled

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9	The number of groundwater samples procured and analyzed for pesticide and nitrite contamination. <b>Benchmark:</b> Over 150 groundwater samples will be taken and analyzed. <b>Result:</b> Two hundred and forty-five (245) groundwater samples were obtained from privately-owned wells and from the DPR's in-field study sites. Approximately 3.8% of the private wells sampled yielded detectable levels of pesticide residues, and about 80% of the wells sampled contained detectable residues of nitrate. The presence of a groundwater-monitoring program increases compliance with groundwater-protection measures in the applicator community. This program also serves to set the baseline for South Carolina's groundwater protection efforts.	245 wells sampled
10	Monetary savings of consumers where the Department of Pesticide Regulation investigated structural pest control activities. <b>Benchmark:</b> Over a million dollars of monetary savings will occur in 2001-2002. <b>Result:</b> This figure is a conservative estimate of the money refunded directly to consumers as a result of the DPR's activities. It includes legal settlements, refunds, and the value of repairs that would not otherwise have been made, but does not include the value of treatments already paid for but properly completed because of the DPR's involvement.	\$1,991,922.00
11	Homeland Security prevention measures. <b>Benchmark:</b> The threat of terrorism will be reduced concerning agrochemicals or aerial application equipment. This will be measured by the actions taken to reduce terrorism and the success of those efforts. <b>Result:</b> Measures are in place to prevent and/or mitigate agroterrorism.	5,661 inspections/contacts

