

## FRAMEWORK TO IDENTIFY INSERVICE TRAINING NEEDS OF EXTENSION AGENTS

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### Abstract

A new approach was used to identify inservice education needs of Clemson University Extension personnel. The approach used included responses from county staff and Extension specialists. First, agents were asked to identify training needs in three areas--subject matter, professional development, and technology. The training needs identified by agents were shared with Extension specialists as they prepared for their annual inservice offerings. Agent needs and inservice offerings of specialists were matched to identify gaps in training needs. Findings revealed a good match between what was needed and what will be offered. A framework was developed based on the findings.

### Introduction

The Cooperative Extension Service (CES) is said to be an "agency of change" for problem solving, a catalyst for individual and group action (Rasmussen, 1989). Rasmussen stated, "Extension was invented by the American people to meet a vital educational base for making rural life profitable, healthful, comfortable, and attractive" (p. 16). The CES was established in 1914 under the Smith-Lever Act with a mission to disseminate useful and practical information in agriculture, home economics, and related subjects to improve the lives of people. The CES is in the forefront of lifelong learning and behavioral change for adult learners. From its very beginning the CES philosophy has been one of advocating positive, lifelong, individual and behavioral change.

American agriculture and lifestyles of American people have drastically changed from what they were in 1914. Extension had to adapt to the societal changes to reorient to a fundamentally industrial and service oriented population (Russell, 1995). The roles and responsibilities of Extension agents have also changed. The educational programs delivered by Extension agents today are more varied than they have ever been and will continue to change to meet the changing needs of the clientele they serve (Radhakrishna, 1998). In addition, the new technology of information gathering, exchange and processing is forcing CES into new roles and away from the traditional research-specialist-agent-farmer hierarchy that has characterized technology transfer (ES-USDA, 1988).

The future of Extension programs will be determined to a large degree by the ability of the agents to do the job and the extent to which they are up-to-date on the subject matter topics. As indicated by Prawl, Medlin, and Gross (1984), the success of educational programs in Extension, just as in teaching, depends heavily upon the abilities of individual professionals. The delivery of a high level of competence is the principle public justification for the Cooperative Extension Service (Strother, 1977). Furthermore, to constantly produce a high volume of quality work, employees must be competent, able to do the job, and be willing to put forth the effort required for the job (Mott, 1972).

Today's challenge for Extension is an expanded educational effort to effectively relate the total expertise and resources of institutions of higher education to the solutions of complex problems of individuals and the society in general (ECOP, 1987). This challenge creates a continuous need for staff development for Extension professionals. One of the most perplexing questions facing Extension staff development is what type of professional development activities do Extension professionals need? Adult learning theory emphasizes the importance of using the needs of the clientele as a basis for inservice training programs. As indicated by Lentz (1983), the purpose of identifying needs is to build a foundation for providing inservice education. Such identification will assist staff development leaders in establishing priorities and designing inservice education offerings. Barrick and Powell (1986) suggest that the strength of inservice training and the follow-up evaluation depends upon planning and planning depends on assessing needs.

Inservice training has been defined as education delivered in a structured setting that enables one to become more competent professionally, that is, to further develop technical subject matter competencies to keep abreast of and, if possible, ahead of change, and to explore educational and technological content and processes in varying depth and to extend personal competencies (National Policy Guidelines for Staff Development, 1977, and Smith, 1995).

Inservice training is used extensively by county staff in Clemson University's Cooperative Extension Service. In fiscal year 1998, there were 99 in-services conducted through the Extension Staff Development office, with over 2,083 participants. Of the 99 in-services offered, 55 were subject matter topics with 1,580 participants, 28 were professional development topics involving 296 participants and 16 were in the area of general education involving 207 participants. A majority of these in-services were held at Columbia (a central location), Regional Education Centers (RECs), and Clemson.

Studies reveal that Extension specialists/faculty are one of the primary sources of information for county agents and staff (Radhakrishna & Thomson, 1996, and Shih & Evans, 1991). Because of the critical role the specialists play as information providers, it is important that they understand the inservice needs of county agents and staff,

development of educational materials, offering inservice training, program evaluation and finally the Extension education process (Mincemoyer & Kelsey, 1999; Baker & Villalobos, 1997; and Gibson & Hillison, 1994).

The traditional approach of identifying inservice training needs has been asking Extension specialists to submit subject matter topics, location, date and time and educational resources needed to do the training. This approach has worked well in the past, but has not been able to meet the expectations of Extension agents. Agents felt that their needs of inservice training did not match with what was offered, resulting in not getting the training needed to improve their skills and be current. In addition, rapid changes in technology and information delivery systems and changing roles and responsibilities of Extension agents call for new approaches to identify and deliver inservice training programs. This study was conducted to develop a framework to identify inservice training needs of Extension agents and determine how those needs can be met.

### **Purpose and Objectives**

The overall purpose of the study was to develop a framework to identify inservice training needs of Extension agents and county staff. Objectives of the study were to:

1. Identify inservice training needs of agents relative to subject matter topics, professional development and technology.
2. Categorize the identified training needs into Public Service and Agriculture (PSA) goals of Clemson University.
3. Match identified training needs of agents with inservice offerings proposed by specialists.
4. Based on objectives 1, 2, and 3, develop a framework that can be used to identify future inservice training needs of agents.

### **Methodology**

In this section, a brief description of Clemson University Cooperative Extension Service and Public Service and Agriculture (PSA) activities are presented. In addition, the population used for the study, instrumentation, and data collection and analysis procedures are also discussed.

The Clemson University Extension Programs goal is to help all families, individuals and communities affected by such changes and identify ways to understand and address those changes so that it will improve the quality of life of all South Carolina citizens. The Clemson University Cooperative Extension Service Plan of Work (POW) is driven by base programs of the state and of the nationwide Cooperative Extension System. The plan includes broad parameters for program development and planning by university and county faculty. Extension advisory board and program identification committees also provide input to the POW (South Carolina Cooperative Extension System Plan of Work: 1997-2001, 1998).

The POW contains 16 initiatives, covering a wide variety of programs and topics that address the critical needs of South Carolina citizens. These 16 initiatives are further grouped by the five strategic goals of Public Service and Agriculture of Clemson University which include: 1) Agrisystems Productivity Profitability, 2) Economic and Community Development, 3) Environmental Conservation, 4) Food safety and Nutrition, and 5) Youth Development (See Table 1). These five PSA goals mirror the Government Performance Results Act (1993) goals developed by USDA-CSREES. Under each initiative, there are projects which specifically address issues relative to the initiatives and PSA/GPRA goals.

#### **Public Service and Agriculture (PSA)**

The Public Service and Agriculture (PSA) activities at Clemson University focus resources toward addressing five strategic goals stated above. The Public Service and Agriculture organizations at Clemson work closely together on the university's main campus and at the four research and education centers, 4-H leadership centers, and all the 46 county Extension offices around the state. The public service groups at Clemson include 1) Agricultural and Forestry Research System which develops relevant, research-based knowledge for agriculture, natural resources and the rural environment to enhance economic development; 2) Cooperative Extension Service which transfers scientifically-based information to individuals, groups and communities to help improve the quality of life; 3) Livestock-Poultry Health Programs which ensures the safety and health of livestock and poultry produced in South Carolina, as well as the health of companion animals and wildlife; and 4) Regulatory Programs which ensure the safety and health of plants produced in South Carolina and certifies the safe and effective use of chemicals in agriculture and home pest control (Public Service for South Carolina, Clemson University, 1997).

#### **Population and Instrumentation**

The population for this study consisted of all 240 county Extension agents employed by Clemson University Cooperative Extension Service (CUCES). A survey instrument suitable for electronic communication was developed to collect data. The instrument was designed to obtain information on two major characteristics: 1) the inservice education needs of extension agents relative to subject matter topics, professional development and

technology, and 2) demographic information--years of experience, primary area of program responsibility, etc. Respondents were asked to list at least five topics in the three categories (subject matter, professional development and technology) for which they needed inservice training. In addition, county Extension agents were asked to comment on their previous inservice training experiences. The instrument was validated for question clarity and content by a panel of three experts consisting of an extension specialist, inservice training coordinator, and an information technology specialist.

The instrument was sent to all county agents via electronic mail with a request to return (via electronic mail) the completed surveys. After two follow-ups (electronic mail), a total of 133 agents responded for a return rate of 55 percent. Frequencies and percentages were used to summarize the data.

## Findings

### **Objective 1& 2: Identify Training Needs**

The training needs identified by agents categorized by subject matter topics, professional development and technology are shown in Table 1. As shown in Table 1, a total of 100 topics were identified by county agents. Of these 100 topics, 65 (65%) were in subject matter areas grouped by five PSA goals, 21 (21%) in professional development and 14 (14%) in technology. Also, shown in Table 1 are inservice training proposals submitted by Extension specialists. Extension specialists submitted a total of 76 inservice training proposals. Of these 76 proposals, 52 (68%) were in subject matter areas grouped by five PSA goals, 16 (21%) in professional development, and 8 (10.5%) in technology. Overall, data in Table 1 indicates a good match between what was needed and what will be offered. However, there are PSA goal areas where limited number of inservice proposals submitted by specialists compared to the need expressed by county agents. It must be noted here that one cannot meet all the training needs expressed by agents because of availability of expertise, time, resources, location and other responsibilities specialists may have in offering inservice training. Therefore, specific topics under each of the five PSA goals for which training is needed should be examined.

Table 1.  
List of Training Needs Expressed by County Agents and Inservice Training Proposals Submitted by Specialists Categorized by PSA Goals, Professional Development and Technology

Topics by PSA Goals	<u>County Agents</u>		<u>Specialists</u>	
	f	%	f	%
<b>Subject Matter Topics</b>				
PSA Goal 1: Agrisystems Productivity & Profitability	13	13.0	8	10.5
PSA Goal 2: Economic & Community Development	9	9.0	9	11.8
PSA Goal 3: Environmental Conservation	24	24.0	20	26.4
PSA Goal 4: Food Safety and Nutrition	8	8.0	8	10.5
PSA Goal 5: Youth Development	11	11.0	7	9.2
<b>Total (Subject Matter Topics)</b>	<b>65</b>	<b>65.0</b>	<b>52</b>	<b>68.4</b>
<b>Professional Development</b>	21	21.0	16	21.1
<b>Technology</b>	14	14.0	8	10.5
<b>Grand Total</b>	<b>100</b>	<b>100.0</b>	<b>76</b>	<b>100.0</b>

### **Objective 3: Matching Agent Training Needs with Specialist Inservice Offerings**

Figure 1 shows the matching of subject matter topics by PSA goals, professional development, and technology inservice training needs identified by Extension agents (left column) and inservice training proposals submitted by specialists (right column). As shown in figure 1, training needs of agents closely match with specialist's inservice offerings in the PSA goal areas of economic and community development (Goal 2), food safety and nutrition (Goal 4). However, matching of training needs versus inservice offerings by specialists were "somewhat" limited. For example, in PSA goals 1, 3, and 5, the need for training in subject matter topics exceeded the specialists' inservice offerings. Similar findings can be evidenced for professional development and technology as well (Figure 1). This discrepancy in training needs and inservice offerings calls for further examination of the specific topics needed, resources available and collaborative efforts so that the training needs can be met in a systematic, cost-efficient way.

**Figure 1: Matching Agent Inservice Training Needs with Specialists' Inservice Offerings**

<p><b><u>Inservice Training Needs by Agents</u></b></p> <p><b>PSA Goal 1: Agrisystems...</b>            Building New Agriculture Market            Livestock Marketing--Beef, Meat, Goat            Cooperative Marketing--Cattle            Marketing Updates            Business Mänge in Horticulture            Ag Finance and Management            Property Rights            Research Updates in Agriculture            Marketing Programs to Underprivileged            Retention of Small/Minority Farms            Small Farmer Vegetable Production            Embryo Transfer, Genetic Engineering            Gene Splicing and Transfer Technology</p> <p><b>PSA Goal 2: Economic &amp; Community...</b>            Family Resource Management            Recruiting Underprivileged Volunteers            Managing Volunteers            Volunteer Recruitment            Leadership            Marketing Place            Nursery Crop Production            Home/Commercial Turfgrass Management            Fire Ant Control</p> <p><b>PSA Goal 3: Environmental Conservation...</b>            Forest Herbicides            Timber Marketing            Forest Management            New Methods for Handling Manure            Aquaculture Wildlife            Aquatic Weed ID with "Real" Weeds            Farming Wildlife            Nuisance Wildlife            Wildlife Management</p>
<p><b><u>Inservice Training Needs by Agents</u></b></p> <p><b>PSA Goal 3 (Continued)</b>            Wildlife--food plots, harvesting, control            Housing Materials, Trends and Impacts            House as a System            Troubleshooting Moisture Problems            Household and Structured Pests            New Termite Treatment            Irrigation Management            Fertilization Management            Entomology            Horticulture            Poultry Science            New/Alternative Forages            Soil Amendments            CCA and Pesticides            Non-Pesticide Control Approaches</p> <p><b>PSA Goal 4: Food Safety and Nutrition...</b>            Food Safety            Food Styling for Media Work            Foods and Nutrition</p>

<p><b><u>Inservice Training Proposals Submitted by Extension Specialists</u></b></p> <p><b>PSA Goal 1: Agrisystems...</b>            Beef Cattle Risk Management            Farmland Protection and Retention Issues            Partitioned Aquacultural System            First on the Scene            Soil Nitrogen, Soil Properties            Precision Agriculture            Extension's Role in Biotechnology            Soil Acidity and Liming--Part II</p> <p><b>PSA Goal 2: Economic &amp; Community...</b>            LifeSmarts for Youth            Money 2000 Reunion            Working with Volunteers            Public Issues Management            Community Leadership Development            Business Retention and Expansion            Train the Trainer--Communication Skills            Residential Irrigation            Professional Turfgrass</p> <p><b>PSA Goal 3: Environmental Conservation...</b>            Forestry Herbicides            Issues in Forest Management            Peanut Management Training            Current Muscadine Production Technology            Regional Small Fruits Inservice            Modern Strawberry Production            Basic Forage &amp; Pasture Management            Pest and Crop Modeling in Tree Fruit            Weed Mgt. for Pastures and Hay Fields            Nutrient Mgt. for Pastures and Hay Fields</p>
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<p>How to Conduct Cooking School            Food Preservation            Basic Food Preparation Series for Adults            Herbal Medicine and Nutrition            Food Nutrition: Intuitive vs. Dieting</p> <p><b>PSA Goal 5: Youth Development...</b>            Teen Programming            Educational Materials for 4-Hers            Project Books for 4-Hers            4-H Projects            4-H General Training            4-H Program Ideas            Youth Nutrition Programs            New and Innovative Youth Programs            Information Packets            Curriculum Training            Livestock Projects</p> <p><b><u>Inservice Training Proposals Submitted by Extension Specialists</u></b></p> <p><b>PSA Goal 3 (Continued)</b></p>
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Evaluating Innovative Techniques and Technologies  
Reducing the Impact of Animal Agriculture  
Animal Manure Utilization  
Urban Runoff Management  
Stream Team Training  
Home-A-Syst  
Healthy Indoor Air in Warm Humid Climates  
Pesticide Application Calibration  
Insect Pests Around the Home  
Introduction to Home Moisture & Related Health Issues

**PSA Goal 4: Food Safety and Nutrition...**

Food Packaging Basics  
ServSafe Recertification  
Managing Crisis Within the Media

**Inservice Training Needs by Agents**

**Professional Development...**

Writing Grants  
Evaluation  
Marketing Extension Programs  
Filing Systems  
Retirements/Benefits  
Stress Management  
Better Work Habits  
Time Management  
Balancing Workload with Less Money  
Diversity  
Writing News Columns/Newsletters  
Coaching Skills  
Career Plan  
Maintaining Records  
Teamwork/Communications Skills  
Developing Partnerships/Futuristic Goal Setting  
Problem Solving  
Supervision  
Evaluation of Employees  
Personnel Procedures  
Professional Etiquette

**Technology...**

Design Newsletters/Brochures  
Using Internet  
Windows  
Web Page Development  
Y2K  
EFNEP Program Reporting System  
Presentation  
Power Point  
WordPerfect  
Pegasus  
Quickens  
Digital Camera  
Word  
Excel

**Inservice Training Proposals Submitted  
by Extension Specialists**

**Professional Development...**

Orientation

Master Food Preserver  
Post-harvest Safety and Quality of Fruits and  
Vegetables  
Advanced Media Techniques  
Helping Consumers Understand Food Safety  
Home Food Preservation Foundations

**PSA Goal 5: Youth Development...**

Conflict Resolution and Anger Management  
Update  
4-H Program Management Level 1  
4-H Work Smarter, Not Harder  
4-H Each one Teach One  
Building Family Strengths  
4-H Teen Leadership Development  
Youth Nutrition Programs

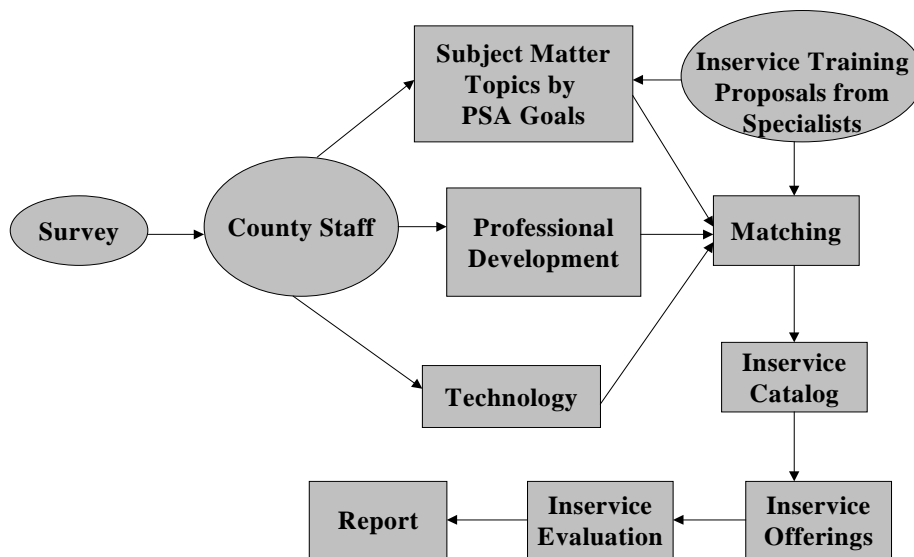
Civil Rights  
Filing and Documentation  
Conducting Successful Needs Assessment  
Introduction to Program Development and  
Evaluation  
Tying Program Development and Evaluation  
Developing Survey Instruments  
Grants: How to Get One  
Diversity  
Teamwork/Communications Skills  
Developing Partnerships/Futuristic Goal Setting  
Problem Solving  
Supervision  
Evaluation of Employees  
Personnel Procedures  
Professional Etiquette

**Technology...**

Windows 98 - 6 sections  
WordPerfect 8 - 6 sections  
WPN - Advanced - 6 sections  
Excel - 6 sections  
Internet and Netscape - 6 sections  
Power Point 8 - 6 sections  
Pegasus - 6 sections  
Digital Imaging - 6 sections

**Objective 4: Framework for Inservice Training**

Figure 2 depicts the proposed framework for offering inservice education programs at Clemson University Cooperative Extension Service. As shown in Figure 2, the responses from county agents to the three major components of the survey--subject matter, professional development and technology were summarized. For purposes of clarity and focus, the identified topics were further grouped into Clemson University's five Public Service and Agriculture (PSA) goals--1) Profitability of Agriculture, 2) Economic and Community Development, 3) Food safety and Nutrition, 4) Environmental Conservation, and 5) Youth Development (Table 1 and Figure 1). The 100 subject matter topics identified by agents and the 76 inservice proposals submitted by specialists were compared and/or matched to determine final inservice offerings to be included in a catalog. An inservice training catalog was developed and distributed to all agents. The next step is to monitor inservice offerings, enrollment, inservice evaluation and submission of a final report to the administration.



**Figure 2: Framework to Identify Inservice Training Needs**

**Conclusions and Recommendations**

Inservice training is a two-way process between university and county staff. The findings of this study have helped Clemson University Cooperative Extension Service to strengthen its inservice training programs by taking a proactive approach to identify inservice training needs of county staff.

The framework has provided a sense of direction and purpose to offering inservice training programs at Clemson University. The findings are of immense value to Extension staff development in establishing priorities to design and to implement inservice training programs. The approach used has helped both county staff, specialists and staff development personnel in targeting the critical needs of training relative to subject matter topics, professional development and technology. Such a proactive approach to inservice training will enhance the abilities of county staff to do their job and keep them up-to-date.

The findings, especially the matching of needs of agents with inservice offerings of specialists have helped the staff development unit to collaborate with other agencies--university and private--to offer inservice training for mutual benefit. For example, the Human Resources Office at Clemson University and Extension staff development are coordinating six training programs relative to professional development. Similarly, discussion is ongoing between Extension staff development and the Technical College Systems in South Carolina to identify areas of training where both institutions share expertise, educational resources, and costs.

The framework has provided a mechanism to integrate Public Service and Agriculture (PSA) goals of Clemson University, Cooperative Extension Plan of Work and inservice offerings. It is hoped that such integration will help the county staff in meeting their training and program needs that are applicable to local issues and programming.

Based on the findings and conclusions, the following recommendations are offered for further study or to make informed decisions relative to inservice training programs:

1. Extension staff development should explore opportunities for agents to meet with other agents in other counties with similar responsibilities to share ideas and successful programs.
2. Extension staff development should develop a plan or a mechanism to track or document trainings taken by county staff to determine the effectiveness of training and its lasting results that can be traced.
3. Extension administration, in consultation with county Extension directors, initiative chairs and staff development should develop guidelines to involve county staff in the planning, development, and delivery of inservice training programs.

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