2011 Virginia Polytechnic Inst. & State University and Virginia State University Combined Research and Extension Plan of Work

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I. Plan Overview

1. Brief Summary about Plan Of Work

Virginia Cooperative Extension (VCE), a partnership between Virginia Polytechnic Institute and State University (VT) and Virginia State University (VSU), the Virginia Agricultural Experiment Station (VAES) and the Virginia State University Agricultural Research Station (VSUARS), enables people to improve their lives through research and education using scientific knowledge focused on the issues and needs of the citizens of Virginia. Audiences are involved in designing, implementing, and evaluating needs-driven programs. VCE is a dynamic organization which stimulates positive personal and societal change leading to more productive lives, families, farms, and forests, as well as a better environment in urban and rural communities.

VCE's GOALS are to: 1) develop and transfer new knowledge in applied and basic life sciences, 2) perform relevant, objective, and timely research 3) improve the quality of life for communities and citizens in the Commonwealth, 4) use a systems approach to programming, with task-oriented work teams that respond to the needs of individuals, groups, and organizations, 5) work with at-risk, underserved, and underrepresented audiences who need focused and specialized attention, 6) fully integrate a culturally diverse paid and volunteer staff in planning, implementing, and evaluating programs, and 7) recruit and collaborate with public and private partners to better utilize resources, heighten impact, and reach a more diverse audience. In particular, VSU's Extension program goals are to: 1) improve local and state economies by helping small and limited-resource farmers and citizens garner resources to own, operate, and sustain small businesses, 2) educate and empower socially disadvantaged farmers to produce, distribute, and market, organic, locally grown, and ethnic foods to feed Virginia's citizens, 3) ensure safe food supplies by teaching small-scale growers and farm families effective food safety practices, 4) address health issues and nutrition practices that confront limited-resource urban and rural citizens, 5) help youth, families, and seniors manage money to survive during challenging economic times, and 6) enable parents and families to leave their children in high quality and safe child-care environments.

PLANNING AND REPORTING: VAES, VSUARS, and VCE address a broad range of problems and issues facing citizens of Virginia through focused research and educational programming. This is accomplished and reported in VAES through the Current Research Information System (CRIS) and the College of Agricultural and Life Sciences planning and reporting system (eFARS). This system, used by VT and VSU faculty, includes annual program plans and reports focused on faculty goals, programs, outcomes, outputs, and other data. This system also provides accurate FTEs, contacts, outputs, and outcomes for each planned program. The foundation for Research and Extension programs are built on the identification and prioritization of strategic issues through annual situation analyses, which are accomplished through the examination of trends and emerging issues identified by local advisory groups (including Extension Leadership Councils) and Extension specialists. This analysis becomes the background and rationale for deciding which problems and issues will be addressed and reported on by VAES, VSUARS, and VCE.

Between fiscal years 2008 and 2012, the base state funds for VCE and VAES have been reduced by a total of 14.3%. In response, VCE embarked on a strategic plan in May 2009, with expected completion around July 2010. The process is expected to systemically examine Extension's core values and mission; define community issues, trends, opportunities, and challenges; identify partners who are currently charged with addressing each issue; and delineate the role VCE should play in achieving desired goals.

VAES, VSUARS, and VCE GOALS: This year's goal areas included: 1) agricultural and environmental sustainability, 2) food, nutrition, and health, 3) biodesign and bioprocessing, 4) the green industry, 5) infectious diseases, and 6) community viability. The VSUARS in particular provides knowledge and technology to small-scale and limited-resource farmers and rural communities to enable them to produce abundant and safe food, while enhancing their economic well-being and quality of life. The primary research goal overall for Virginia is to develop relevant basic and applied research data to form the basis for Extension programming. A wide range of long and short term research projects are undertaken to provide a continuous flow of new or more fully developed knowledge to provide science-based information to enhance the quality of life for citizens. The overall education goal is to bring about change in people's knowledge, understanding, abilities, or behavior related to an issue and/or broader changes in economic, environmental, or social conditions. Progress towards these goals is recorded by planned program at the individual and team levels.

REPORTING REQUIREMENTS: All Extension faculty (agents, specialists, and administrators) and program assistants submit individual program reports. Also, county/city employees supervised by VCE conducting Extension programs submit annual program reports. Summary reports are developed from the individual reports. All research faculty are required to propose peer reviewed Experiment Station projects submitted to USDA/NIFA, and entered into CRIS. Researchers prepare annual progress and termination reports reviewed by the VAES director before being submitted to CRIS. In addition, all research and Extension faculty are required to submit an annual report through eFARS. This locally developed system

documents teaching, research, and Extension accomplishments and impacts for individual, unit, college, and organizational review. Updates to eFARS in 2009 better aligned planning and reporting with the nine planned programs presented in this report.

In response to NIFA and external merit reviews of the 2008 report and the 2010-2014 plan of work for Virginia, the number and type of outcomes for some planned program have been modified. These modifications will also incorporate the five NIFA focus areas within the structural data framework of the 2010 e-FARS reporting system.

PLANNED PROGRAMS FOR 2011-15: 1) Childhood Obesity, 2) Climate Change and Natural Resources, 3) Economics and Commerce, 4) Families and Communities, 5) Food, Nutrition, and Health, 6) Food Safety, 7) Global Food Security and Hunger, 8) Sustainable Energy, and 9) Youth Development.

Estimated Number of Professional FTEs/SYs total in the State.

Year	Extension		Research	
	1862	1890	1862	1890
2011	305.0	23.0	180.0	12.5
2012	310.0	27.0	185.0	12.5
2013	315.0	28.0	192.0	12.5
2014	320.0	28.0	197.0	12.5
2015	320.0	28.0	203.0	12.5

II. Merit Review Process

1. The Merit Review Process that will be Employed during the 5-Year POW Cycle

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

2. Brief Explanation

A merit review process involving Virginia, Tennessee and Maryland was initiated in 2008. Planning and reporting experts react to the Virginia planning and reporting efforts. The review recognizes areas of excellence, and areas for improvement. Suggestions are incorporated into the current year's planning and reporting documents.

RESEARCH REVIEW

Research under the Hatch, McIntire-Stennis, and Animal Health and Disease Acts is conducted in the College of Agriculture and Life Sciences, College of Natural Resources, and Virginia-Maryland Regional College of Veterinary Medicine that constitute the Virginia Agricultural Experiment Station (VAES). Proposal selection criteria include: 1) research relevance to the goals of the department and college; 2) needs of the people the research would serve; 3) priorities established by task forces, work groups, or commodity research committees; 4) objectives and procedures are clearly stated; 5) proposed duration is realistic; 6) appropriate or desirable cooperators; 7) impacts for Virginia (and elsewhere) or anticipated economic importance and 8) project leader competence.

The project leader submits the revised proposal to the department/unit head, with a letter delineating the changes made from reviewer's recommendations and/or rebuttal for any recommendations not accepted. The project leader enters CRS Forms AD-416 and AD-417 on the CRIS website-http://cwf.uvm.edu/dris/ and sends a copy of the proposal electronically to the VAES office.

Any applicant at VSU Agricultural Research Station (ARS) completes and submits a Request for Approval to Submit Proposals Form to the Director of Research who reviews the pre-proposal and notifies the applicant about his decision whether the proposal can be developed fully or not.

Review of Full Evans-Allen Proposal - A full proposal is submitted by applicant(s) to the Director of Research for review by external anonymous experts. The proposal must address the needs of the state and the United States, the degree of relevance of the proposal research to the land-grant mission and priorities of the University, the need for initiation of research in new areas, and other matters related to grantsmanship. The reviewers pay particular attention to scientific and technical merit, opportunities for cooperation with other individuals and units within the University and

the Virginia clientele.

Expert reviewers: 1) review all proposals for scientific and technical merits, 2) ensure all proposals fulfill the land-grant mission and priorities of the University, 3) ascertain that what is being proposed lies within the full range of expertise and capability of the investigators and the University, and 4) assist applicants with acceptable proposals for locating outside peer reviewers to further review proposals, if necessary for substance and overall quality. Based on the external reviewers' comments, the Director advises the applicant to address the concerns about the proposal or rewrite it to incorporate the relevant suggestions.

EXTENSION REVIEW

The review process for Extension covers all programs conducted by VCE through fourteen program teams (PT). The PTs, made up of Extension specialists and agents, and experiment station researchers, review programs at least annually to maintain, modify, create, and report on programs to meet needs indentified through external and internal stakeholder input.

VCE addresses a broad range of issues facing the Commonwealth through focused educational programming. This is accomplished and reported through VCE's fourteen Program Teams and State Program Leaders who serve as partners for each Team. A web-based planning and reporting system, organized by our nine Planned Programs, documents program outputs and outcomes. Problems and issues identified through situation analysis are communicated throughout VCE and educational program plans are developed by the interdisciplinary PTs. Program proposals identify programming outputs, outcomes, and an evaluation plan to be conducted by the PTs. The program proposals are reviewed by VCE programming leadership.

III. Evaluation of Multis & Joint Activities

1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?

The Virginia Agricultural Experiment Station (VAES) conducts research relevant to the needs and priorities of the citizens of the Commonwealth. Research projects are established based on the input of advisory committees at thirteen Agricultural Research and Extension Centers (ARECs) across the state. The twelve academic departments within the College of Agriculture and Life Sciences each maintain stakeholder groups and the College of Agriculture and Life Sciences has an advisory group of producers, commodity groups, and agribusiness leaders that provide important feedback to VAES. In turn, VAES provides research-based input for the VCE programming process through faculty research, Extension specialists, and administratively through AREC directors and statewide Extension program leaders.

Virginia Cooperative Extension connects with the grassroots of the state through partnerships with Extension Leadership Councils (ELCs). At the local level, this partnership represents the diversity of each county, city, and town. Representation includes VCE program representatives from 4-H/Youth Development, Family and Consumer Sciences, Agriculture and Natural Resources and Community Viability, community leaders, and other organized community partners. Extension staff and Leadership Council members work as equal partners to determine needs, establish program priorities, plan and implement educational programs, identity and secure resources, market VCE and its programs, and evaluate and report program results/impacts to program stakeholders. Currently, all 107 Extension units in Virginia report having an organized local ELC.

At the state level, local connections are made through the Virginia Cooperative Extension Leadership Council (VCELC). The partnership includes volunteer leaders representing the 22 planning districts of Virginia, at-large members appointed by the director and administrator, all VCE District Directors, all chairpersons (or designees) of FCS and 4-H leadership councils, the VCE Director (VT), the VCE Administrator (VSU), designated VCE staff from both VT and VSU, the 1862 director of the agricultural experiment stations, and the 1890 director of research. The VCELC provides a formal mechanism for VSU and VT to receive stakeholder input for Extension and research programs.

2. How will the planned programs address the needs of under-served and under-represented populations of the

The stakeholder input process used by research and Extension includes opportunities to collect relevant issues and problems from under-served and under-represented populations. Campus-based faculty are sensitive to these

populations and specifically include input from a broad representation of stakeholder groups to enhance their ability to include under-served and under-represented audiences and their needs. Field faculty are being challenged to grow and document efforts to address the needs of under-served and under-represented populations. In some cases, programs are specifically designed to address the needs of under-served and under-represented audiences. For example, parenting and bankruptcy education programs specifically target under-served and under-represented populations. Faculty are sensitive to this work and develop projects and programs incorporating input and needs from under-served and under-represented audiences. In addition, all Extension agents are required to record how they plan to serve underserved and underrepresented audiences in their personal action plans for each major program at the beginning of each program year. Finally, research and Extension work at VSU is specifically targeted at reaching underserved and low-resource audiences.

3. How will the planned programs describe the expected outcomes and impacts?

All planned program teams developed specific outcomes they expect faculty will address over a period of five years. These outcomes range from short-term (knowledge, attitude, skills and aspiration changes), to medium-term (practice or behavior changes), to long-term (broader impacts and situation change for individuals, communities, and systems). For each planned program, these outcomes will be monitored, evaluated, and documented each year through an evaluation plan. Planned program team leaders meet at least twice a year to discuss outcomes and impact. Many of the teams meet throughout the year to plan, implement, measure, and report on outcomes and impacts. The VCE intranet contains documents, PowerPoints, and other tools to assist teams with this work. http://www.ext.vt.edu/vce/reports/

4. How will the planned programs result in improved program effectiveness and/or efficiency?

Virginia's integrated research and Extension planned programs have a historic and strong connection that increases the effectiveness and scope of both efforts. The results of the research agenda provide the basis for relevant and effective Extension programs. The outcomes of Extension programs inform the research agenda. This integrated approach embodies the Land Grant philosophy and results in improved effectiveness and efficiency of research and Extension educational programs for the benefit of the citizens of Virginia. Some researchers and Extension faculty have begun to develop logic models that connect their work. The researcher explicates knowledge discovery and development and then connects with the Extension faculty through knowledge dissemination to change learning, behavior, and conditions.

IV. Stakeholder Input

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

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Other (focus groups, listening sessions, issue forums, key informant interviews)

Brief explanation.

A variety of actions continue to be used to seek stakeholder input including issues forums, focus groups, community surveys, key informant interviews, and listening sessions. http://www.ext.vt.edu/vce/support/process/situation.html

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

1. Method to identify individuals and groups

- Use Advisory Committees
- Use External Focus Groups
- Open Listening Sessions
- Use Surveys

- Other (Extension Leadership Councils)

Brief explanation.

The Virginia Agricultural Experiment Station (VAES) conducts research relevant to the needs and priorities of the citizens of the Commonwealth. Research projects are established based on the input of advisory committees at each of the thirteen Agricultural Research and Extension Centers (ARECs) distributed across the state. The twelve academic departments within the College of Agriculture and Life Sciences each maintain stakeholder groups and the College has its own advisory committee of producers, commodity groups, and agribusiness leaders that provide important feedback to VAES. VAES provides research-based input to the VCE programming process through faculty research and Extension specialists and administratively through AREC directors and statewide Extension program leaders.

VCE formally establishes connectivity with the grassroots of the state through partnerships known as Extension Leadership Councils (ELCs). At the local level, this partnership represents the diversity of each county and city in which VCE exists as a resource. Representation includes VCE programming areas (4-H/Youth Development, Family and Consumer Sciences, Agriculture and Natural Resources and Community Viability), community leaders, and other organized community entities that partner with VCE. Extension staff and Leadership Council members work as equal partners to determine needs, establish program priorities, plan and implement solutions, identify and secure resources, market VCE and its programs, and evaluate and report program results/impacts to program stakeholders. Currently, all 107 Extension units in Virginia report having an organized local ELC.

At the state level, local connectivity is achieved through the Virginia Cooperative Extension Leadership Council (VCELC). The partnership includes volunteer leaders representing the 22 planning districts of Virginia, at-large members appointed by the director and administrator, all VCE District Directors, all chairpersons (or designees) of VCE state program leadership councils for FCS, and 4-H, the VCE Director (VT), the VCE Administrator (VSU), designated VCE staff from VT and VSU, the 1862 director of the agricultural experiment stations, the 1890 director of research, and the director of governmental relations at VT. Extension provides a formal mechanism for VSU and VT to receive stakeholder input for Extension and research programs.

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

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting with the general public (open meeting advertised to all)
- Survey of the general public
- Other (focus groups, key informant interviews, public issues forums, listening sessions)

Brief explanation.

A variety of methods will be used to collect stakeholder input and can include issues forums, focus groups, community surveys, key informant interviews, and listening sessions.

3. A statement of how the input will be considered

- In the Budget Process
- To Identify Emerging Issues
- In the Action Plans
- To Set Priorities

- Other (staff professional development)

Brief explanation.

Input from stakeholder groups is considered in identifying current and emerging issues, setting priorities for programs, developing implementation plans, and staff professional development offerings. This ultimately influences the budgeting process.

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Childhood Obesity

2. Brief summary about Planned Program

Over the past 30 years the number of overweight children and teens has nearly tripled with the result that one in three children in the U.S. between the ages of 6 and 19 is overweight or obese. This problem of epidemic proportions presents a major public health challenge to parents, schools, and health care professionals. Both formal and informal programs offer valuable access to children of all ages and their parents, and caregivers. Head start and other day care providers and grades K-12 provide access to children and youth on a daily basis with on-going opportunities for nutrition and health education to prevent the development and provide targeted intervention to existing childhood overweight. School and preschool breakfast and lunch not only provide healthy food but also model appropriate meals and snacks. Nutrition and health education can be a part of the formal school curriculum meeting Standards of Learning in science and health and also be included in after-school and recreational summer and winter youth activities. Training for preschool and K-12 teachers, school food service managers, and school wellness committee members, along with presentations and printed materials for parents are comprehensive strategies to combat childhood overweight.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
702	Requirements and Function of Nutrients and Other Food Components	20%	0%	0%	0%
703	Nutrition Education and Behavior	40%	70%	0%	0%
724	Healthy Lifestyle	40%	30%	0%	0%
	Total	100%	100%	0%	0%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

The growing numbers of overweight preschool, school age, and teenage children continue to challenge our society and its resources. Overweight in children has both physical and emotional consequences. Overweight children are more likely to have high blood pressure and high blood cholesterol, conditions previously associated with middle age adults. The growing numbers of children with type 2 diabetes has been attributed to overweight, and overweight children are likely to continue to be overweight as adults. For the first time in history many children will die at younger ages than their parents. Large children also report lower self-esteem, sadness, feelings of isolation and an overall lower quality of life than healthy weight children. Overweight is also costly adding to long term health care expenditures. A report from Kaiser Permanente indicated an overweight child is likely to participate in more primary care sick visits and mental health-related visits over a 1-year period than a healthy-weight child, at an additional annual cost of approximately $72 (sick plus mental health visits). A 2007 study reported that 70 percent of obese young people already had at least one additional risk factor for cardiovascular disease, while 39 percent had at least two additional risk factors. The number of hospitalizations of kids and teens, ages 2 to 19, with a primary or secondary diagnosis of obesity nearly doubled between 1999 and 2005, climbing from 21,743 to 42,429. FCS

agents, 4-H agents, and staff of the Family Nutrition Program will increase the number of preschool and K-12 children reached with nutrition and health education with an emphasis on healthy weight. Current curricula including LEAP, Food Friends and Mighty Moves, and I am Moving, I am Learning, directed toward preschool audiences, and Healthy Weights for Healthy Kids used in middle school, form the basis for current teaching. By providing training for both preschool and K-12 teachers and coaches, the impact on Virginia youth can be expanded beyond what might be accomplished by FCS and 4-H agents and the Family Nutrition Program alone. The curricula noted above emphasize healthy eating, regular and sustained physical activity, and appropriate attitudes toward food, eating, and body weight. Concentrated efforts will be directed toward reaching parents who must be allies with school and health professionals in combating child overweight. Cooperation with parent-teacher groups, the faith-based community, and preschool child and Head Start programs provide access to parents for distribution of printed materials as well as face-to-face presentations and food-related activities with their children. School Health Advisory Boards, as required by law, are developing policies and goals for their implementation. VCE can provide training and support to these groups as they grow in their advocacy role.

2. Scope of the Program

- In-State Extension
- In-State Research

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

• Effective strategies to prevent childhood overweight must begin in early childhood as young children are forming their food and activity habits that will endure for their lifetime. Reinforcement of patterns of healthy eating and lifestyle practices must continue through the school years with appropriate age-related teaching that addresses new patterns of choice and growing independence.

• Nutrition and activity education must allow for individual differences, food preferences, and cultural and ethnic characteristics. Messages must be simple and achievable within the individual's social, economic, and community setting.

• Parents must be involved at all levels to provide a supportive and learning environment to develop not only healthy eating and physical activity habits, but also appropriate attitudes toward food and body size.

• Curricula for teaching both children and parents must reflect the Experiential Learning Model incorporating hands-on activities in group settings with opportunities for physical activity.

• Extension educators will have the curricula, learning resources, and other supporting materials to provide quality programming.

• Extension educators will engage organizational and community partners, including government, business, education, and community agencies, in collaborative efforts to prevent childhood obesity and encourage maintenance of healthy weights.

2. Ultimate goal(s) of this Program

The ultimate goal is to achieve optimum physical and emotional health in each of our nation's children. Excessive weight gain with the accumulation of inappropriate amounts of body fat, resulting in the clinical diagnosis of overweight or obesity, carries severe physical and emotional consequences. Overweight children are more likely to be overweight adults and even in childhood begin to undergo the physical changes leading to chronic disease and disability. At the other extreme, children and teens obsessed with the fear of gaining body weight and body fat can develop eating disorders such as anorexia nervosa or bulimia in which they starve themselves to the point of death or practice self-induced vomiting or other self-destructive behaviors. FCS curricula are designed to support positive attitudes toward eating, food, and body image. Lessons emphasize individual differences in body types and size, and reinforce the concept that appropriate amounts of healthy foods and getting the recommended amount of daily physical activity leads to a healthy body regardless of size. A focus on experiential learning helps children of all ages learn healthy patterns of eating.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2011	10.9	1.0	7.5	0.0
2012	11.1	2.0	7.6	0.0
2013	11.3	3.0	7.7	0.0
2014	11.4	3.0	7.8	0.0
2015	11.4	3.0	7.8	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Conduct educational classes, workshops, short courses, meetings, seminars, and trainings for children, parents, teachers, school food service workers, and health and other professional groups; develop curriculum, newsletters, and other educational resources; establish and implement train-the-trainer models to promote educational opportunities; facilitate local and statewide coalitions and/or task forces; conduct assessments and community surveys; partner with community agencies and institutions to facilitate programs and community development; contribute to the creation/revision of social systems and public policies; conduct research studies and disseminate program and research results to both the professional community and lay public through journal articles, papers, reports, and public media; develop and implement marketing strategies using various outlets to promote program participation, with special attention to underserved and disadvantaged audiences; disseminate research-based information to lay audiences and address emerging needs using a variety of media and innovative technology resources; cooperate with media and other community agencies to seek effective means of targeting new and non-traditional audiences; and respond to consumer inquiries.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Group Discussion	● Web sites
● Demonstrations	
● Other 1 (hands-on food preparation)	

3. Description of targeted audience

Childhood Obesity, Nutrition and Fitness: young children (ages 2 - 5 years); school-age children; adolescents; parents, foster parents, and grandparents; caregivers (in-home and for-profit day care providers); teachers and other school faculty for young children, youth, and adolescents; school food service workers and managers; school wellness committees; school nurses and other health care providers; and Extension educators.

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	500	1000	30000	5000
2012	525	1050	30700	5100
2013	550	1100	31400	5200
2014	575	1150	32100	5300
2015	600	1200	32850	5400

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

2011:0 **2012:**0 **2013:**0 **2014:**0 **2015:**0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2011	5	5	10
2012	6	6	12
2013	7	7	14
2014	8	8	16
2015	9	9	18

V(H). State Defined Outputs

1. Output Target

- Childhood Nutrition and Fitness - Number of pre-school age youth participating in Extension nutrition education, physical activity, or other obesity-prevention programs at childcare centers or schools.

2011:1000	**2012:**1025	**2013:**1050	**2014:**1075	**2015:**1100

- Childhood Nutrition and Fitness - Number of elementary, middle, and high school-age youth participating in Extension nutrition education, physical activity,
or other obesity-prevention programs in school, after-school, or recreational settings.

2011:5500	**2012:**5625	**2013:**5750	**2014:**5875	**2015:**6000

- Childhood Nutrition and Fitness - Number of Head Start and preschool teachers, day care providers, elementary and secondary school teachers, school nurses, school food service managers, and school health and wellness committee members participating in Extension training for implementing nutrition education, physical activity, and other obesity-prevention programs reaching children and their parents.

2011:680	**2012:**735	**2013:**790	**2014:**845	**2015:**900

V(I). State Defined Outcome

O. No.	Outcome Name
1	Childhood Nutrition and Fitness - Number of pre-school age youth who try more new foods, consume more fruits and vegetables, eat a wider variety of foods, or increase their physical activity after participation in an Extension nutrition education, physical activity, or other obesity-prevention program at a Head Start or child care center or school.
2	Childhood Nutrition and Fitness - Number of select elementary, middle, or high school age youth who gain knowledge and awareness of nutrition, physical activity, or positive body image or improve at least one health- related behavior after participation in an Extension nutrition education, physical activity, or other obesity-prevention program in a school, after-school, or recreational setting.
3	Childhood Nutrition and Fitness: Number of Head Start and preschool teachers, day care providers, elementary and secondary school teachers, school nurses, school food service managers, and school health and wellness committee members participating in Extension training who implement a nutrition education, physical activity, or other obesity-prevention activity in their preschool, elementary or secondary school, or after-school or recreational setting.

Outcome # 1

1. Outcome Target

Childhood Nutrition and Fitness - Number of pre-school age youth who try more new foods, consume more fruits and vegetables, eat a wider variety of foods, or increase their physical activity after participation in an Extension nutrition education, physical activity, or other obesity-prevention program at a Head Start or child care center or school.

2. Outcome Type : Change in Action Outcome Measure

2011:1000	**2012:**1050	**2013:**1100	**2014:**1150	**2015:**1200

3. Associated Knowledge Area(s)

- 702 - Requirements and Function of Nutrients and Other Food Components
- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 2

1. Outcome Target

Childhood Nutrition and Fitness - Number of select elementary, middle, or high school age youth who gain knowledge and awareness of nutrition, physical activity, or positive body image or improve at least one health- related behavior after participation in an Extension nutrition education, physical activity, or other obesity-prevention program in a school, after-school, or recreational setting.

2. Outcome Type : Change in Action Outcome Measure

2011:10300	**2012:**10375	**2013:**10450	**2014:**10525	**2015:**10600

3. Associated Knowledge Area(s)

- 702 - Requirements and Function of Nutrients and Other Food Components
- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 3

1. Outcome Target

Childhood Nutrition and Fitness: Number of Head Start and preschool teachers, day care providers, elementary and secondary school teachers, school nurses, school food service managers, and school health and wellness committee members participating in Extension training who implement a nutrition education,

physical activity, or other obesity-prevention activity in their preschool, elementary or secondary school, or after-school or recreational setting.

2. Outcome Type : Change in Action Outcome Measure

2011:50	**2012:**55	**2013:**60	**2014:**65	**2015:**70

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (Loss of county agents)

Description

An early severance option brought about by state budget shortfalls and affecting numerous Extension professionals may result in less available time for programming.

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

1. Evaluation Studies Planned

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

Description

All major programs relating to children and youth are evaluated to determine program effectiveness, although outcomes may not be available from all locations statewide. Research funding has enabled us to expand our reach in various program areas and in that situation, data are gathered at every location.

2. Data Collection Methods

- Sampling
- Mail
- On-Site
- Observation
- Tests

Description

In school situations it is sometimes possible to conduct pre- and post-test evaluations of knowledge gained or changes in food selection or other behaviors. For pre-school age audiences, teachers can provide observations of the children's behavior at meal or snack time, their response in class sessions, and participation in group physical activity. An evaluation of training workshops for daycare providers, pre-school teachers, K-12 teachers, school food service managers, and school wellness committee members could take the form of a 6-month follow-up asking how information learned has been incorporated into classroom teaching, planned activities, or meal programs or what changes have occurred in their schools as a result of the training.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Climate Change and Natural Resources

2. Brief summary about Planned Program

This planned program aims to improve the management of the state's soil and water resources, 15.4 million acres of forest land, 680,000 acres of freshwater lakes, and 5,000 miles of shoreline while positively impacting climate change. Effective programming efforts will have strong impacts on land management efforts, which ultimately will directly affect forest stewardship, agricultural practices and climate change. Demonstrating the importance of effective forest, water or soil management will increase the storage of carbon and decrease the use of petrochemicals that directly impact our environment. The bulk of Virginia's natural resources are in private ownership. Therefore, in the absence of strict regulations, VCE is reliant upon financial incentives and education/technical assistance to help private owners make wise decisions on the management and use of natural resources. For example, though the state has ownership rights to the state's fish and wildlife populations, the habitat is owned and managed mostly by private individuals. Without the proper knowledge, private landowners may not make the best decisions on managing wildlife habitat. VCE is the only state agency charged solely with providing educational services to owners of Virginia's natural resources. While other agencies also provide some education, they are regulatory agencies and do not often gain the trust of the landowner which Extension provides. Additionally, personnel with other agencies are excellent partners in education, but often lack the training and resources to be strong educators. VCE can also assist state regulatory agencies develop technically-sound regulations and best management practices for protecting soil and water resources. For example, personnel from of the Virginia Department of Transportation require training in the environmentally sound management of the sizeable acreage under their control. Wastewater, water, and solid waste utilities must make sound environmental and economic decisions on the treatment and utilization of solid and liquid wastes that they process and generate.

Finally, Virginia relies heavily on its rich natural resource base for both economic and recreational benefits. Virginia's soil, water, forest, and wildlife resources support manufacturing and recreational industries valued at over $25 billion annually. Educational opportunities impact these industries by providing tools for effective decision making that impact good land management decisions, efficient processing activities and reduced energy consumption.

3. Program existence : New (One year or less)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	10%	10%	5%	10%
102	Soil, Plant, Water, Nutrient Relationships	10%	10%	10%	10%
104	Protect Soil from Harmful Effects of Natural Elements	10%	10%	10%	10%
111	Conservation and Efficient Use of Water	5%	5%	5%	5%
112	Watershed Protection and Management	10%	10%	10%	10%
123	Management and Sustainability of Forest Resources	10%	10%	10%	10%
124	Urban Forestry	5%	10%	5%	10%
131	Alternative Uses of Land	10%	10%	10%	10%
133	Pollution Prevention and Mitigation	10%	10%	10%	10%
135	Aquatic and Terrestrial Wildlife	10%	10%	10%	10%
304	Animal Genome	0%	0%	5%	0%
403	Waste Disposal, Recycling, and Reuse	5%	5%	5%	5%
605	Natural Resource and Environmental Economics	5%	0%	5%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Climate Change and Natural Resources is a very broad planned program, with many inherent issues. For example, Virginia's forests provide a host of multiple benefits, some monetary like the sale of stumpage, and some intrinsic, such as clean water, carbon storage, and an aesthetic environment. Yet, there are problems in the forest. Insects, disease, and fire all take their toll. Additionally, forests are being invaded by a host of exotic plant species, like the tree-of-heaven, Japanese honeysuckle, oriental bittersweet, and autumn-olive. Virginia also loses over 25,000 acres of forest/agricultural land for development every year. Forest landowners need the latest research to best manage their lands and understand the importance of keeping land in forests. Extension programs provide just that. In many cases landowners need basic information and assistance to prepare management plans, and locating sources of governmental financial assistance. Many farmers and forest owners are concerned about protecting their lands in the long term, and want unbiased information about conservation easements and other protection tools. Many activities on the land contribute to nonpoint source pollution of the state's waters, and Extension can assist with educational programs for a wide variety of issues and audiences. For example: Land managers, waste applicators, land reclamation professionals, and farmers need assistance with nutrient management plans to guide them in fertilizer applications, and in waste application treatments and utilization. All of these efforts have a strong impact on climate change and our environment. In far southwest Virginia landowners and coal mine operators need assistance in correctly applying reclamation practices to insure both prudent bond release and a favorable environment after the reclamation process is completed. Public utilities are tasked with processing solid and liquid wastes and must understand proper land management practices to prevent impairment of soil and water resources, and state regulatory personnel require technical guidance to develop sound environmental regulation. Educational efforts in biomass growth utilization for energy offer new markets for our farmers and landowners, while reducing fossil fuel consumption that impacts climate change.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Many assumptions are implicit in this planned program. For example, most of the natural resources in Virginia are privately owned, and this will probably continue. While Virginia has some environmental regulations, it is not known as a heavily regulated state. Governmental financial incentives and education/technical assistance guide farmers and landowners in land management decisions. Extension is in the strongest position to provide this education. It is assumed that through education, farmers and landowners will make prudent decisions, and adopt new technologies. It is also assumed that internet use in the home will increase in the future, as more of our educational materials are web based. Furthermore, it is assumed that publicly owned utility operators and state regulatory agencies will make wise decisions that affect the public through increased educational efforts.

2. Ultimate goal(s) of this Program

To impact climate change through educational and research efforts that directly foster greater forest stewardship, environmentally sound land management activities and improved water quality. To provide for improved environmental quality, while also providing for economic vitality of families and communities.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2011	24.0	1.0	18.7	1.0
2012	24.4	1.0	19.0	1.0
2013	24.8	1.0	19.3	1.0
2014	25.1	1.0	19.6	1.0
2015	25.1	1.0	19.6	1.0

V(F). Planned Program (Activity)

1. Activity for the Program

Primary outputs from this program include the following: developing and delivering educational programs such as short courses, workshops, field days and tours, seminars, conducting applied research and link with extension, develop and maintain demonstration areas, developing collaborative partnerships with government officials, state agencies, non governmental organizations, developing and disseminating educational materials such as extension bulletins, journal articles, conference proceedings, trade journal articles, DVD's, and developing and maintaining web based educational materials such as short courses, web sites, discussion boards.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (web-based applications) ● Other 2 (satellite delivery)	● Public Service Announcement ● Newsletters ● TV Media Programs ● Web sites

3. Description of targeted audience

Farmers, forest owners, loggers, Christmas tree growers, youth, homeowners, mill owners and workers, private consultants and companies, local governmental officials, waste water treatment operators, state and federal agencies, nongovernmental organizations, professional associations and societies, and community groups.

V(G). Planned Program (Outputs)

1. Standard output measures

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

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

3. Expected Peer Review Publications

V(H). State Defined Outputs

1. Output Target

- Number of educational programs offered.

2011:900	**2012:**900	**2013:**900	**2014:**900	**2015:**900

- Number of educational materials and curriculas developed

2011:20	**2012:**20	**2013:**20	**2014:**20	**2015:**20

- Number of applied research projects.

2011:70	**2012:**70	**2013:**70	**2014:**70	**2015:**70

- Acres of land exposed to educational programming efforts.

2011:100000	**2012:**100000	**2013:**100000	**2014:**100000	**2015:**100000

- Identifiable impacts reported by agents/specialists

2011:60	**2012:**60	**2013:**60	**2014:**60	**2015:**60

V(I). State Defined Outcome

O. No.	Outcome Name
1	Increased number of people adopting at least one new or improved land management practices.
2	Improved natural resource industries that contribute to community viability.
3	Number of participants learning about the quality of their private water supply and about private water system maintenance by participating in a county-based Virginia Household Drinking Water Program water testing clinic.
4	Increase in the number of individuals who gain knowledge as certified nutrient management planners in turf and landscape systems.
5	Increase in the number of acres covered by nutrient management plans in turf and landscape systems due to participation in Extension educational programs.
6	Increase in the tons of compost produced from organic wastes typically land-applied (manure, biosolids) or land-filled (yardwaste, biosolids, industrial sludge) as a result of increased knowledge and skills.
7	Increase in the number of people directly impacted by new or improved land management practices
8	Increased public awareness of climate change, biodiversity, and ecosystem services.
9	Increased number of stakeholders involved in community natural resource management and decision-making.
10	Increase program participants understanding of raw material conversion and modern business management practices.
11	The general public, landowners, and loggers use the forest in alternative and traditional ways to increase value and profit.
12	Increase in the number of acres directly impacted by new or improved land management practices.
13	Number of projects assembling transcriptomes for vertebrates and invertebrates from the Southern Appalachian Mountains

Outcome # 1

1. Outcome Target

Increased number of people adopting at least one new or improved land management practices.

2. Outcome Type : Change in Action Outcome Measure

2011:250	**2012:**250	**2013:**250	**2014:**250	**2015:**250

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 111 - Conservation and Efficient Use of Water
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 133 - Pollution Prevention and Mitigation
- 135 - Aquatic and Terrestrial Wildlife
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension
- 1890 Research

Outcome # 2

1. Outcome Target

Improved natural resource industries that contribute to community viability.

2. Outcome Type : Change in Condition Outcome Measure

2011:10	**2012:**10	**2013:**10	**2014:**10	**2015:**10

3. Associated Knowledge Area(s)

- 104 - Protect Soil from Harmful Effects of Natural Elements
- 112 - Watershed Protection and Management
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 3

1. Outcome Target

Number of participants learning about the quality of their private water supply and about private water system maintenance by participating in a county-based Virginia Household Drinking Water Program water testing clinic.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:900	**2012:**1000	**2013:**1300	**2014:**1400	**2015:**1400

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 133 - Pollution Prevention and Mitigation

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Increase in the number of individuals who gain knowledge as certified nutrient management planners in turf and landscape systems.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:25	**2012:**25	**2013:**25	**2014:**25	**2015:**25

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 112 - Watershed Protection and Management
- 133 - Pollution Prevention and Mitigation

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Increase in the number of acres covered by nutrient management plans in turf and landscape systems due to participation in Extension educational programs.

2. Outcome Type : Change in Action Outcome Measure

2011:500	**2012:**500	**2013:**500	**2014:**500	**2015:**500

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 111 - Conservation and Efficient Use of Water
- 133 - Pollution Prevention and Mitigation

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 6

1. Outcome Target

Increase in the tons of compost produced from organic wastes typically land-applied (manure, biosolids) or land-filled (yardwaste, biosolids, industrial sludge) as a result of increased knowledge and skills.

2. Outcome Type : Change in Action Outcome Measure

2011:25000000	**2012:**25000000	**2013:**25000000	**2014:**25000000	**2015:**25000000

3. Associated Knowledge Area(s)

- 133 - Pollution Prevention and Mitigation
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 7

1. Outcome Target

Increase in the number of people directly impacted by new or improved land management practices

2. Outcome Type : Change in Action Outcome Measure

2011:500	**2012:**500	**2013:**500	**2014:**500	**2015:**500

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management

- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 131 - Alternative Uses of Land
- 133 - Pollution Prevention and Mitigation
- 135 - Aquatic and Terrestrial Wildlife
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 8

1. Outcome Target

Increased public awareness of climate change, biodiversity, and ecosystem services.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:100	**2012:**100	**2013:**100	**2014:**100	**2015:**100

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 131 - Alternative Uses of Land

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 9

1. Outcome Target

Increased number of stakeholders involved in community natural resource management and decision-making.

2. Outcome Type : Change in Action Outcome Measure

2011:100	**2012:**100	**2013:**100	**2014:**100	**2015:**100

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 131 - Alternative Uses of Land
- 133 - Pollution Prevention and Mitigation
- 135 - Aquatic and Terrestrial Wildlife

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 10

1. Outcome Target

Increase program participants understanding of raw material conversion and modern business management practices.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:250	**2012:**250	**2013:**250	**2014:**250	**2015:**250

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 131 - Alternative Uses of Land
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 11

1. Outcome Target

The general public, landowners, and loggers use the forest in alternative and traditional ways to increase value and profit.

2. Outcome Type : Change in Action Outcome Measure

2011:300	**2012:**300	**2013:**300	**2014:**300	**2015:**300

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 131 - Alternative Uses of Land
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 12

1. Outcome Target

Increase in the number of acres directly impacted by new or improved land management practices.

2. Outcome Type : Change in Condition Outcome Measure

2011:10000	**2012:**10000	**2013:**10000	**2014:**10000	**2015:**10000

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 112 - Watershed Protection and Management
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 131 - Alternative Uses of Land
- 133 - Pollution Prevention and Mitigation
- 135 - Aquatic and Terrestrial Wildlife
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 13

1. Outcome Target

Number of projects assembling transcriptomes for vertebrates and invertebrates from the Southern Appalachian Mountains

2. Outcome Type : Change in Knowledge Outcome Measure

2011:1	**2012:**1	**2013:**1	**2014:**1	**2015:**1

3. Associated Knowledge Area(s)

- 135 - Aquatic and Terrestrial Wildlife
- 304 - Animal Genome

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Many external factors affect both the outcomes and the ability to support educational programs behind the outcomes. Natural disasters can not only siphon off funds, but create new issues related to climate change, natural resources and the environment. For example, hurricane blowdown can flood the market with low cost wood, and create fuel buildup and insect and disease problems. Floods and droughts have unique problems, and both greatly affect natural resources issues. Certainly, funding for Extension programs, particularly state funds control the ability to develop and deliver new programs. Finally, new laws and regulations may both create new issues and opportunities, and also cause other issues to fade away. In most cases new regulations result in a need for more education for those affected by the regulations.

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

1. Evaluation Studies Planned

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

Description

Evaluation of a broad array of programs, such as those represented by the Climate Change and Natural Resource planned program, require a multitude of varying procedures. In general, Extension educators are responsible for determining their evaluation procedure that best fits their program, time, and fiscal resources. For example, in 2008-2009 the Virginia Sharpe Loggers Program undertook a complete evaluation covering the years of the program. An extensive survey of program participants is was conducted and adjustments were made from the results to further meet the audience needs. One adjustment was the development of on-line training for loggers for recertification.

2. Data Collection Methods

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation
- Portfolio Reviews
- Tests
- Journals

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Economics and Commerce

2. Brief summary about Planned Program

The well-being of Virginians is dependent on both their individual and family economic status. In addition, for Virginia small business owners, the impacts of changing markets and environmental issues affect not only their business but also their family well-being.

For individuals and families, identify theft, bankruptcy, and greater personal responsibility for retirement are real problems. Identity theft complaints represented 37% of the 686,683 Federal Trade Commission complaints filed in 2005. Over 41,000 Chapter 7 bankruptcy petitions, were filed in 2004. Individuals have greater responsibility for their own retirement planning, as companies do away with defined benefit pension plans and institute 401(k), 403(b), and 457 plans. Baby boomers are retiring in record numbers. The Virginia state legislature recognized the need for financial education with the passage of Senate Bill 950 in 2005 that requires financial literacy and economic concepts be integrated into the Standards of Learning in grades K - 12.

Virginia small business are undergoing dramatic change as business integration accelerates, traditional markets disappear, and trade, commodity, and environmental policies provide both new constraints on, and opportunities for business profits. Virginia businesses find themselves forced to manage new sources of business risk, and find that known risks are more volatile than ever before.

For small businesses, rapidly changing consumer demands, high costs of labor and health care, and increased imports of lower costs goods all contribute increased business risk and a cost price squeeze, resulting in reduced profitability. Small businesses are looking for products and services to fill niches that both meet consumers' needs and provide for a profitable business plan.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
602	Business Management, Finance, and Taxation	10%	10%	10%	0%
603	Market Economics	5%	5%	10%	0%
605	Natural Resource and Environmental Economics	5%	5%	15%	0%
607	Consumer Economics	25%	20%	15%	0%
608	Community Resource Planning and Development	10%	0%	10%	0%
610	Domestic Policy Analysis	15%	0%	10%	0%
801	Individual and Family Resource Management	25%	60%	20%	0%
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	5%	0%	10%	0%
	Total	100%	100%	100%	0%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Improved financial security of individuals, families, agricultural, and small businesses is critical for the long-term economic health of Virginia. Individuals and families, who have set financial goals and understand the importance of planning for future events ease the burden on government assistance. Understanding business, financial, and risk management are the underlying principles for obtaining long-term financial security for individual entrepreneurs. Profitable and successful small businesses are the cornerstone of robust families and the communities in which they live.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Lack of, management skills and knowledge of basic economic and financial management and analysis skills, are obstacles to individual and family economic well-being. Small business owners are struggling to remain profitable. A stated priority is to research issues and opportunities available to these business people and then train and assist them to gain skills to adapt to these critical issues. The combination of research and Extension activities will enable Virginia's small businesses, individuals and families to have financial security.

2. Ultimate goal(s) of this Program

To improve the financial and economic well-being of Virginians and Virginia business managers through targeted research and educational programs.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2011	22.6	3.0	17.1	0.0
2012	23.0	3.0	17.4	0.0
2013	23.4	4.0	17.7	0.0
2014	23.7	4.0	18.0	0.0
2015	23.7	4.0	18.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Research and educational programs will be conducted to support the needs of Virginians and Virginia small business managers. Research in personal finance issues and evaluation of programming will be conducted to improve financial literacy. Financial literacy curriculum will be developed using proven delivery methods. Research will be conducted to develop knowledge of market systems. Research-based information will be disseminated via media and informational meetings. Decision aids, workshops, detailed curriculum, and distance educational methods will be used to support change in the overall behavior of learners.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations	● Public Service Announcement ● Newsletters ● Web sites

3. Description of targeted audience

Individuals, families, owners and managers of farms, and small businesses; local, state, and federal personnel and policy makers; and private sector service suppliers are the targeted audiences.

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	35000	150000	15000	4000
2012	35000	150000	15000	4000
2013	35000	150000	15000	4000
2014	35000	150000	15000	4000
2015	35000	150000	15000	4000

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

2011:0 **2012:**0 **2013:**0 **2014:**0 **2015:**0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2011	7	3	10
2012	7	3	10
2013	7	3	10
2014	7	3	10
2015	7	3	10

V(H). State Defined Outputs

1. Output Target

- Number of education programs planned in public policy education

2011:10 **2012:**10 **2013:**10 **2014:**10 **2015:**10

- Number of individuals and families completing basic financial management strategies such as budgeting, setting financial goals, establishing a saving/investing program, and implementing practices to reduce the chance for identity theft after receiving instruction.

2011:10000 **2012:**10000 **2013:**10000 **2014:**10000 **2015:**10000

- Number of educational programs conducted on creating home-based and micro businesses

2011:50 **2012:**50 **2013:**50 **2014:**50 **2015:**0

- Number of communities and local governments partnering with Virginia Cooperative Extension faculty to seek and develop alternative economic development opportunities or address public policy and community planning goals.

2011:10 **2012:**10 **2013:**10 **2014:**10 **2015:**10

- Number of youth educational programs conducted on completing basic financial management strategies such as budgeting, setting financial goals, establishing a saving/investing program after receiving financial instruction.

2011:5000 **2012:**5000 **2013:**5000 **2014:**5000 **2015:**5000

- Number of program participants improving their housing environment through new ownership, avoiding foreclosure or purchasing and maintaining a home.

2011:500 **2012:**500 **2013:**500 **2014:**500 **2015:**500

V(I). State Defined Outcome

O. No.	Outcome Name
1	Increase the number of individuals completing basic financial management strategies including budgeting, setting financial goals, establishing a saving/investing program.
2	Increase the percentage of trained volunteers and citizens participating in Extension entrepreneurship workshops indicating increased entrepreneurial knowledge and skills applied to evaluation and planning of new enterprises (such as small businesses, micro-businesses, home-based businesses and agri-tourism).
3	Increase the percentage of communities and local governments partnering with Virginia Cooperative Extension faculty that seek and develop alternative economic development opportunities, and community planning goals.
4	Increase the number of individuals improving their housing environment by adopting techniques allowing them to purchase a home or to avoid foreclosure.
5	Increase the number of youth learning the basic financial management strategies such as budgeting, setting financial goals, establishing a saving/investing program after receiving financial instruction.
6	Increase the number of local food entrepreneurs who make direct connections with local food distribution outlets such as grocery stores, colleges, universities, hospitals, schools, nursing homes etc.

Outcome # 1

1. Outcome Target

Increase the number of individuals completing basic financial management strategies including budgeting, setting financial goals, establishing a saving/investing program.

2. Outcome Type : Change in Action Outcome Measure

2011:80	**2012:**80	**2013:**80	**2014:**80	**2015:**80

3. Associated Knowledge Area(s)

- 603 - Market Economics
- 607 - Consumer Economics
- 801 - Individual and Family Resource Management
- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 2

1. Outcome Target

Increase the percentage of trained volunteers and citizens participating in Extension entrepreneurship workshops indicating increased entrepreneurial knowledge and skills applied to evaluation and planning of new enterprises (such as small businesses, micro-businesses, home-based businesses and agri-tourism).

2. Outcome Type : Change in Knowledge Outcome Measure

2011:40	**2012:**40	**2013:**40	**2014:**40	**2015:**40

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation
- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 3

1. Outcome Target

Increase the percentage of communities and local governments partnering with Virginia Cooperative Extension faculty that seek and develop alternative economic development opportunities, and community planning goals.

2. Outcome Type : Change in Action Outcome Measure

2011:20	**2012:**20	**2013:**20	**2014:**20	**2015:**20

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation
- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Increase the number of individuals improving their housing environment by adopting techniques allowing them to purchase a home or to avoid foreclosure.

2. Outcome Type : Change in Action Outcome Measure

2011:500	**2012:**500	**2013:**500	**2014:**500	**2015:**500

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management
- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

Increase the number of youth learning the basic financial management strategies such as budgeting, setting financial goals, establishing a saving/investing program after receiving financial instruction.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:3000	**2012:**3000	**2013:**3000	**2014:**3000	**2015:**3000

3. Associated Knowledge Area(s)

- 607 - Consumer Economics
- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 6

1. Outcome Target

Increase the number of local food entrepreneurs who make direct connections with local food distribution outlets such as grocery stores, colleges, universities, hospitals, schools, nursing homes etc.

2. Outcome Type : Change in Condition Outcome Measure

2011:5	**2012:**5	**2013:**5	**2014:**5	**2015:**5

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

All items listed above directly affect agriculture, families, communities, and all forms of businesses (i.e., droughts, floods, and changes in government policy can lead to dramatic shifts in the structure of an industry). These changes may be short-lived (flood) or may cause structural changes to an industry (e.g., loss of peanut and tobacco programs).

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study

Description

Educational programs will be formally evaluated with a post program questionnaire. As funds permit additional formal evaluations will be conducted to demonstrate the degree of adoption of behavior change.

2. Data Collection Methods

- Sampling
- Mail
- On-Site
- Observation
- Tests

Description

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Families and Communities

2. Brief summary about Planned Program

The two VCE program areas of FCS and Community Viability comprise the Families and Communities planned program. These two program areas provide the infrastructure which drives VCE's ability to address the family as a system. Strong families are the foundation of strong communities. Thus, the essential ingredients are combined to leverage capacity to affect and lead condition change. The program is designed to help youth and adults in Virginia confront the multitude of issues that affect their well-being and create a greater capacity for self, family, and community awareness, action, and interaction. Through interaction and increased capacity, a greater sense of community interdependence is realized. Ultimately through these accomplishments families and communities will create lasting changes and improve their lives.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	40%	40%	0%	0%
802	Human Development and Family Well-Being	60%	60%	0%	0%
	Total	100%	100%	0%	0%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

All children, families, and communities can grow and develop to realize their full potential. These groups are confronted with a multitude of issues that affect their well-being such as child and school-aged care, at-risk youth behaviors, strained family relationships, aging populations, poverty, and community leadership. Concerns about how Virginia's youth, families, and communities are functioning, adjusting, and adapting to these issues have economic impacts for the Commonwealth and are backed by VCE's community situation analysis results. Further, Extension programs for youth, adults, and families have shown positive influences on the quality of community life. It is VCE's, VT's, and VSU's responsibility to continue to apply research, educate, and provide outreach services to insure best practices that create healthy families and communities.

2. Scope of the Program

- In-State Extension
- Multistate Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

People have a desire and have made a commitment to improve their lives and their communities; people need a knowledge base, appropriate tools, adequate resources, support, and ongoing evaluation and feedback to improve their lives and their communities; and people need connection with others, opportunities to practice new skills and positive interactions with role models and mentors in a nurturing environment to contribute to community sustainability. Educational programs must be under girded by a solid research base. Finally, through engaging volunteers and program stakeholders, programs can serve as catalysts for change.

2. Ultimate goal(s) of this Program

To improve youth, family, and community functioning through the use of collaborative, integrative, educational programming and research in the areas of parenting, child development, child care, youth development, and community development.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2011	19.5	2.5	17.2	0.0
2012	19.8	3.0	17.5	0.0
2013	20.1	3.0	17.8	0.0
2014	20.4	3.0	18.0	0.0
2015	20.4	3.0	18.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Activities include entrepreneurial education, asset-based economic development, leadership, civic engagement, child care provider education, parent education, online education and distance learning, and specialized trainings and workshops to qualify instructors and to educate trainers.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion	● Public Service Announcement ● Newsletters ● Web sites ● Other 1 (e-mail, phone, newspaper) ● Other 2 (materials and resources)

3. Description of targeted audience

Parents, grandparents, child care providers and early childhood educators, providers of after-school care, community organizations, community partners, community leaders and government officials, donors, K-12

educators, and volunteers.

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	100000	100000	300	200
2012	100000	100000	300	200
2013	100000	100000	300	200
2014	100000	100000	300	200
2015	100000	100000	300	200

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

2011:0 **2012:**0 **2013:**0 **2014:**0 **2015:**0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2011	0	2	2
2012	0	2	2
2013	0	2	2
2014	0	2	2
2015	0	2	2

V(H). State Defined Outputs

1. Output Target

- Number of trainings, educational workshops, and on-line education sessions for VCE's targeted audiences.

2011:1000 **2012:**1000 **2013:**1000 **2014:**1050 **2015:**1050

- Number of fact sheets, publications and curricula on families and communities.

2011:20 **2012:**20 **2013:**20 **2014:**25 **2015:**25

- Number of citizens receiving entrepreneurial education.

2011:950 **2012:**950 **2013:**1000 **2014:**1000 **2015:**1000

- Number of adults engaged in community-based leadership development education.

2011:100 **2012:**100 **2013:**100 **2014:**110 **2015:**110

- Number of communities partnering with Virginia Cooperative Extension faculty to address emerging issues (i.e. land use, agritourism, local foods, bioenergy, youth gangs, and others).

2011:4 **2012:**4 **2013:**5 **2014:**5 **2015:**5

- Number of workshops, activities, or programs offered to address emerging issues.

2011:12 **2012:**12 **2013:**12 **2014:**12 **2015:**12

V(I). State Defined Outcome

O. No.	Outcome Name
1	Parenting Education - Increase percentage of parenting education participants that indicate increased knowledge of effective parenting practices, such as nurturing and guiding children, understanding basic child development, reducing family conflict and managing stress, and knowing how to access available community resources to meet family needs.
2	Parenting Education - Increase percentage of parenting education participants that adopt developmentally appropriate, effective parenting practices, such as nurturing and guiding children, and actively seeking to manage stress and reduce family conflicts.
3	Parenting Education - Increase percentage of parenting education participants that use community resources more frequently to meet family needs regarding housing, food, health/mental health issues, employment, legal concerns, educational needs, etc.
4	Child Care Provider/Early Childhood Training - Increase percentage of early childhood professional development participants that indicate increased knowledge of core competency areas, such as basic child development, appropriate child observation and assessment, effective interaction strategies, and effective learning environments.
5	Child Care Provider/Early Childhood Training - Increase percentage of early childhood professional development participants that improve their early childhood learning environment by making practice changes, such as implementing developmentally-appropriate learning practices, interaction practices and observation assessment strategies.
6	Child Care Provider/Early Childhood Training - Increase percentage of early childhood professional development participants that improve program management practices, such as effective relationships with enrolled families, record keeping, facilities management, budgeting, and emergency preparedness.
7	Facilitation Skills Training - Increase percentage of trained volunteers and citizens participating in facilitation skills training that indicate increased knowledge and skills as a result of participation.
8	Leadership Development Education - Increase percentage of adult citizens participating in leadership development education programs that indicate increased knowledge and skills as a result of participation.
9	Food-Based Business Workshops - Increase the percentage of trained volunteers and citizens participating in food-based business workshops that indicate increased understanding/knowledge of food-based businesses as a result of participation.

Outcome # 1

1. Outcome Target

Parenting Education - Increase percentage of parenting education participants that indicate increased knowledge of effective parenting practices, such as nurturing and guiding children, understanding basic child development, reducing family conflict and managing stress, and knowing how to access available community resources to meet family needs.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:60	**2012:**60	**2013:**60	**2014:**60	**2015:**60

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 2

1. Outcome Target

Parenting Education - Increase percentage of parenting education participants that adopt developmentally appropriate, effective parenting practices, such as nurturing and guiding children, and actively seeking to manage stress and reduce family conflicts.

2. Outcome Type : Change in Action Outcome Measure

2011:40	**2012:**40	**2013:**40	**2014:**40	**2015:**40

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 3

1. Outcome Target

Parenting Education - Increase percentage of parenting education participants that use community resources more frequently to meet family needs regarding housing, food, health/mental health issues, employment, legal concerns, educational needs, etc.

2. Outcome Type : Change in Action Outcome Measure

2011:25	**2012:**25	**2013:**25	**2014:**25	**2015:**25

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 4

1. Outcome Target

Child Care Provider/Early Childhood Training - Increase percentage of early childhood professional development participants that indicate increased knowledge of core competency areas, such as basic child development, appropriate child observation and assessment, effective interaction strategies, and effective learning environments.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:60	**2012:**60	**2013:**60	**2014:**60	**2015:**60

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 5

1. Outcome Target

Child Care Provider/Early Childhood Training - Increase percentage of early childhood professional development participants that improve their early childhood learning environment by making practice changes, such as implementing developmentally-appropriate learning practices, interaction practices and observation assessment strategies.

2. Outcome Type : Change in Action Outcome Measure

2011:40	**2012:**40	**2013:**40	**2014:**40	**2015:**40

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 6

1. Outcome Target

Child Care Provider/Early Childhood Training - Increase percentage of early childhood professional development participants that improve program management practices, such as effective relationships with enrolled families, record keeping, facilities management, budgeting, and emergency preparedness.

2. Outcome Type : Change in Action Outcome Measure

2011:40	**2012:**40	**2013:**40	**2014:**40	**2015:**40

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 7

1. Outcome Target

Facilitation Skills Training - Increase percentage of trained volunteers and citizens participating in facilitation skills training that indicate increased knowledge and skills as a result of participation.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:60	**2012:**60	**2013:**60	**2014:**60	**2015:**60

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 8

1. Outcome Target

Leadership Development Education - Increase percentage of adult citizens participating in leadership development education programs that indicate increased knowledge and skills as a result of participation.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:60	**2012:**60	**2013:**60	**2014:**60	**2015:**60

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 9

1. Outcome Target

Food-Based Business Workshops - Increase the percentage of trained volunteers and citizens participating in food-based business workshops that indicate increased understanding/knowledge of food-based

businesses as a result of participation.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:60	**2012:**60	**2013:**60	**2014:**60	**2015:**60

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

All items listed above directly affect agriculture, families, communities, and all forms of businesses, i.e., droughts, floods, poor economy, and changes in government policy can lead to dramatic shifts in the structure of an industry, and hinder the ability of families to participate in educational programming efforts. Budget cuts at the state and local levels and potentially related decreases in staffing may also impact the ability to offer as many programs/workshops.

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study

Description

Evaluation of a broad array of programs, such as those represented by Community Viability and Family and Consumer Sciences require a multitude of varying procedures. In general, Extension educators are responsible for determining the evaluation procedure that best fits their program, time, and money resources. For example, the Family and Consumer Sciences agents are preparing uniform evaluation surveys for parenting education programs and early childhood professional development trainings.

2. Data Collection Methods

- Sampling
- Mail
- On-Site
- Structured
- Case Study
- Observation
- Portfolio Reviews
- Other (Electronic surveys, focus groups)

Description

Pre and post test surveys of program participants, case studies of program participants, post only and retrospective post surveys will be conducted with program participants. Focus groups will be conducted with program participants. Follow-up surveys will also be conducted with program participants. Partners will also be surveyed regarding some of the process and outcome-related measures.

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Food, Nutrition, and Health

2. Brief summary about Planned Program

Recent data show that 66% of adults are overweight, with Virginia demonstrating the fastest growth rate of obesity in the entire country. Overweight and obesity increase the risk for several health conditions as well as chronic diseases, such as heart disease and diabetes. In Virginia alone, these two diseases account for over $4 billion in health care costs. Furthermore, it has been reported that families of low socioeconomic status suffer disproportionately from poor health. They experience a higher incidence of high blood pressure, cholesterol, stroke, obesity, and diabetes. In Virginia, there are over 240,000 people who participate in the food stamp program with the potential for many more to receive this assistance. Presently, there are two nutrition education programs that address impoverished citizens: The Expanded Food and Nutrition Education Program (EFNEP) and the Supplemental Nutrition Assistance Program (SNAP-ED), formerly food stamp education program.

Effective research initiatives and educational strategies are warranted to reduce the rate of adult overweight and lifestyle-related chronic diseases. Virginia Cooperative Extension aims to develop, implement, and evaluate integrated research-based community programs to improve dietary habits and increase physical activity. Research into the social contributions of improved health status will also be conducted, including developing a more complete understanding of obesity from its root causes to its association with disease. Program delivery methods will be driven by local needs and socio-demographic characteristics of respective communities, including: classes, workshops, trainings, one-on-one interventions, demonstrations, PSA's, newsletters, and websites. Future efforts will build on existing collaborations and programs pertaining to adult nutrition, health, fitness and overall wellness, and chronic disease prevention and management. with outcomes reflecting the goals and objectives of these programs. Evaluation studies will use a wide range of methods, depending on local needs and resources.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
702	Requirements and Function of Nutrients and Other Food Components	10%	10%	10%	0%
703	Nutrition Education and Behavior	45%	45%	40%	0%
721	Insects and Other Pests Affecting Humans	0%	0%	10%	0%
724	Healthy Lifestyle	45%	45%	40%	0%
	Total	100%	100%	100%	0%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Chronic diseases such as heart disease, stroke, cancer, and diabetes are among the most prevalent, costly, and preventable of all health problems. Seven of ten deaths each year in the U.S. are attributed to chronic disease. The prolonged illness and disability associated with these diseases also decreases the quality of life for millions of Americans and in Virginia alone cardiovascular disease and diabetes account for over $4 billion in health care costs. Much of this burden is preventable, since unhealthy eating and physical inactivity are major contributors to these diseases, along with other conditions, such as high blood pressure, high cholesterol, and overweight.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Health promotion and chronic disease reduction is dependent on lifestyle practices that emphasize self-care, healthy eating, and regular physical activity. Disease prevention education must provide consumers with tools to assess their current behavior and make changes if needed. Intervention strategies such as the transtheoretical stages of change help consumers assess their risk, consider alternative behaviors, and take action. Small changes over time are more easily implemented and more likely to be continued than drastic changes in food or activity patterns. Existing curriculum appropriate for older adults can be implemented at senior centers and congregate meal sites. Partnerships joining Extension, the Virginia Department of Health, and other health care professionals can provide hands on learning in appropriate food selection and preparation practices to assist persons with diabetes in effectively managing their disease.

2. Ultimate goal(s) of this Program

To improve health as a result of better eating behaviors, increased physical activity, and other self-care practices
1. Adults will increase their intake of fruits, vegetables, whole grains, and low-fat calcium rich foods to meet the recommended number of servings each day, 2. Adults increase their level of physical activity to 150 minutes accumulated each week (or 30 minutes on at least 5 days per week), 3. Adults participate in regular health screenings to support early diagnosis and intervention for chronic disease, 4. Older adults adopt appropriate diet and activity behaviors to increase years of independent living, and 5. Individuals with diabetes adopt food and self-care practices that lower risk of disease complications and disability.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2011	0.0	2.5	0.0	0.0
2012	0.0	3.0	0.0	0.0
2013	0.0	3.0	0.0	0.0
2014	0.0	3.0	0.0	0.0
2015	0.0	3.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Conduct educational classes, workshops, meetings, and trainings, develop products, curriculum, resources, facilitate coalitions and/or task forces, conduct assessments and community surveys, partner with community agencies and institutions to facilitate programs and community development, create/revise social systems and public policies, conduct research studies, disseminate program and research results through papers, reports, and media, develop and implement marketing strategies using various outlets to promote program participation, disseminate research-based information to consumers using a variety of media and technology resources, cooperate with media and other community agencies to seek effective means of reaching new and non-traditional audiences, and respond to consumer inquiries.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● Web sites
● Demonstrations	● Other 1 (TV, radio, newspaper)
● Other 1 (e-mail, telephone)	
● Other 2 (health fairs, events, certificat)	

3. Description of targeted audience

Young adults (ages 18 to 59), older adults (age 60 and older), caregivers of older adults, adults with type 2 diabetes, parents and caregivers of individuals with type 2 diabetes, senior center and meal site staff and volunteers, and Extension educators.

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	80000	230000	260000	5000
2012	81320	236000	263600	5262
2013	82680	242180	267300	5575
2014	84080	248550	271110	5788
2015	85500	225000	275000	6014

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

2011:0 **2012:**0 **2013:**0 **2014:**0 **2015:**0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2011	20	3	23
2012	20	3	23
2013	20	3	23
2014	20	3	23
2015	20	3	23

V(H). State Defined Outputs

1. Output Target

- Number of adults participating in diabetes educational programs.

2011:1200 **2012:**1300 **2013:**1400 **2014:**1500 **2015:**1600

- Number of adults participating in at least one session on adult nutrition, fitness, worksite wellness, or health.

2011:2800 **2012:**2900 **2013:**2900 **2014:**2900 **2015:**3000

- Number of research projects completed or in progress on adult obesity and related chronic disease.

2011:10 **2012:**10 **2013:**10 **2014:**10 **2015:**10

- Number of research papers published on adult obesity and related chronic disease.

2011:7 **2012:**7 **2013:**8 **2014:**8 **2015:**9

- Number of Master Food/Health volunteers trained to extend the work of an Extension educator.

2011:25 **2012:**30 **2013:**35 **2014:**40 **2015:**45

V(I). State Defined Outcome

O. No.	Outcome Name
1	Increase in the number of individuals with diabetes who have improved their Hemoglobin A1c level, meal planning behaviors or physical activity behaviors, three months after participating in a Diabetes Education programs offered in collaboration with a local health care provider.
2	Increase in number of adults that make lifestyle changes which improve their dietary quality and/or physical activity level after participation in VCE programs.
3	Number of discoveries from completed obesity related research projects which focus on examining adult obesity from its root causes to its association with chronic disease.
4	Number of projects manipulating genomes of insects vectoring diseases to humans

Outcome # 1

1. Outcome Target

Increase in the number of individuals with diabetes who have improved their Hemoglobin A1c level, meal planning behaviors or physical activity behaviors, three months after participating in a Diabetes Education programs offered in collaboration with a local health care provider.

2. Outcome Type : Change in Action Outcome Measure

2011:50	**2012:**60	**2013:**70	**2014:**80	**2015:**90

3. Associated Knowledge Area(s)

- 702 - Requirements and Function of Nutrients and Other Food Components
- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 2

1. Outcome Target

Increase in number of adults that make lifestyle changes which improve their dietary quality and/or physical activity level after participation in VCE programs.

2. Outcome Type : Change in Action Outcome Measure

2011:11600	**2012:**12200	**2013:**12800	**2014:**13400	**2015:**14000

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 3

1. Outcome Target

Number of discoveries from completed obesity related research projects which focus on examining adult obesity from its root causes to its association with chronic disease.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:4	**2012:**4	**2013:**4	**2014:**4	**2015:**0

3. Associated Knowledge Area(s)

- 702 - Requirements and Function of Nutrients and Other Food Components
- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Research

Outcome # 4

1. Outcome Target

Number of projects manipulating genomes of insects vectoring diseases to humans

2. Outcome Type : Change in Knowledge Outcome Measure

2011:1	**2012:**1	**2013:**1	**2014:**1	**2015:**1

3. Associated Knowledge Area(s)

- 721 - Insects and Other Pests Affecting Humans

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

If food production facilities and/or agriculture is damaged or disturbed by a natural disaster, less food is available to be processed and consumed. This not only has an impact on local economies and access to food, but how Extension educators respond to local needs. If a natural disaster took place in Virginia, Extension educators in affected localities would likely redirect the attention and programming to assist with disaster relief for safe food/water and consumer issues. Other factors that may influence outcomes include economic changes (eg. employment rates, disposable income and purchasing power of consumers for food, food security, purchasing patterns of consumers as they relate to Virginia foods), public policy changes (e.g. taxation of "junk foods," restrictions in food advertising toward children, changes in nutrition integrity and physical education guidelines for schools), and population changes (e.g. immigration, new cultural groups). If economic, demographic, social, and legal characteristics change at the local and state levels, Extension educators need to respond and tailor

educational programs to these changes to be competitive with other public priorities and programmatic challenges. There is also "saturation," which may occur related to overweight and obesity given the amount of current press and attention on the topic. Finally, if appropriations decline for FCS programs, it is possible that there would be fewer FCS Extension agents influencing what could be accomplished in programs for general and specific audiences.

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)

Description

The type of evaluation study will depend on the program and activity.

2. Data Collection Methods

- Sampling
- Mail
- Telephone
- On-Site
- Observation
- Tests
- Journals
- Other (pedometers, online surveys)

Description

The type of data collection method depends on the program and activity. For most food, nutrition, and health programs, data are gathered through on-site surveys with participants. Follow-up sessions or surveys help determine maintenance of behavior changes after the program ends. .

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Food Safety

2. Brief summary about Planned Program

Foodborne illnesses accounts for an estimated 76 million illnesses each year in the United States with potentially deadly consequences (particularly for immuno-compromised individuals and the elderly). Further, with over 500 food processing firms headquartered in Virginia, an eight billion dollar industry, it is critical for companies to prevent food production and food processing deficiencies to be competitive and ensure safe products for consumers.

Extension and research initiatives will also take place to improve safe food handling practices in restaurants and food processing facilities (based on current Hazard Analysis Critical Control Point -HACCP standards), and to investigate strategies to prevent microbial contamination of the food supply as well as methods to remove contamination when it occurs.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals	5%	0%	0%	0%
501	New and Improved Food Processing Technologies	20%	0%	25%	0%
502	New and Improved Food Products	25%	0%	25%	25%
702	Requirements and Function of Nutrients and Other Food Components	0%	0%	0%	25%
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	25%	0%	25%	0%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	25%	100%	25%	50%
	Total	100%	100%	100%	100%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Foodborne illness or food safety presents another major health concern among Virginian citizens. Foodborne disease is caused by ingesting contaminated foods or beverages. Many different disease-causing microbes or pathogens can contaminate foods. There are an estimated 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths each year

associated with food microorganisms. From 2000 to 2003 Virginia reported 16 confirmed foodborne outbreaks per year. Long-term, chronic illness may also be attributed to foodborne contaminants, although the specific costs and impacts are unknown. Most foodborne outbreaks are linked to improper food handling by retail outlets or consumers in their homes. Each year, food processors add approximately $8 billion to the value of agricultural food products processed in the Commonwealth. Over 500 food processing firms are headquartered and operate within the state. Virginia food producers and processors need to continuously improve their products and processes to remain competitive and maintain high safety standards. The HACCP system has been supported by the National Academy of Science, the U.S. Food and Drug Administration and USDA to prevent food production and processing deficiencies that could be potentially harmful to the consumer. HACCP helps the food processor assure final products meet all safety criteria. The intent of HACCP is to identify those points critical to food safety in the processing flow and adequately control them. It is important to train local, state, and federal food inspectors in the HACCP concept and current food safety issues.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Virginia consumers and food processors need science-based information and education about efficient, safe processing, handling, and preservation of food to minimize the risk of foodborne illness. Educational programming must provide hands-on training to maximize retention of material. Food preparation and handling curriculum takes trainees through real world situations and helps them to work through problems associated with food preparation. Partnerships between VCE and the Virginia Department of Health promote maximum coverage of consumers and food service employees across the state.

2. Ultimate goal(s) of this Program

Consumer and Producer Initiative: 1. Consumers increase their knowledge of food safety practices in the home, 2. Food handlers improve food safety and handling practices in restaurants, 3. Food processors improve knowledge of HACCP practices and current safety standards for food processing, 4. Consumers have more access to locally processed, nutritious, and safe food at reasonable costs, 5. Fewer foodborne illnesses and outbreaks are reported in Virginia, and 6. Virginia reports increased sales of Virginia Processed Foods.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2011	10.2	0.5	5.6	3.0
2012	10.3	1.0	5.7	3.0
2013	10.5	1.0	5.8	3.0
2014	10.7	1.0	5.9	3.0

Year	Extension		Research	
	1862	1890	1862	1890
2015	10.7	1.0	5.9	3.0

V(F). Planned Program (Activity)

1. Activity for the Program

Conduct educational classes, workshops, meetings, and trainings, develop products, curriculum, resources, facilitate coalitions and/or task forces, conduct assessments and community surveys, partner with community agencies and institutions to facilitate programs and community development, create/revise social systems and public policies, conduct research studies, disseminate program and research results through papers, reports, and media, develop and implement marketing strategies using various outlets to promote program participation, disseminate research-based information to consumers using a variety of media and technology resources, cooperate with media and other community agencies to seek effective means of reaching new and non-traditional audiences, and respond to consumer inquiries.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Demonstrations	● Web sites

3. Description of targeted audience

Retail and food service employees, retail and food service management, temporary food vendors, child care providers, young adults (ages 25-59), older adults (ages 60 and older), Extension educators, and commercial food processors.

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	78000	225000	47300	1930
2012	79450	231000	48300	1930
2013	80900	237180	49300	1930
2014	82450	243550	50350	1930
2015	84000	250000	62150	1930

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

2011:0 **2012:**0 **2013:**0 **2014:**0 **2015:**0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2011	5	3	8
2012	5	3	8
2013	5	3	8
2014	5	3	8
2015	5	3	8

V(H). State Defined Outputs

1. Output Target

- Number of food service managers, supervisors and food handling personnel from restaurants, cafeterias, daycare and other food service facilities completing food safety training offered by extension educators in Virginia

  2011:1000 **2012:**1000 **2013:**1000 **2014:**1000 **2015:**1000

- Number of home-based food business workshops conducted for food product formulation, facility planning, food processing and safety, product evaluation, food packaging and labeling, and record keeping.

  2011:4 **2012:**4 **2013:**4 **2014:**4 **2015:**4

- Number of short-courses provided on food safety practices including HACCP training, Good Agricultural Practices and recall workshops to industry personnel, consumer organizations, Extension Agents and to local, state, and federal health inspectors

  2011:5 **2012:**5 **2013:**5 **2014:**5 **2015:**5

- Number of research projects completed or in progress in the area of food safety.

  2011:7 **2012:**8 **2013:**8 **2014:**8 **2015:**8

- Food Safety - Number of home based business entrepreneurs that have products evaluated for their safety by the 'Food Processor Technical Assistance Program' to prevent foodborne illness across the commonwealth.

  2011:100 **2012:**100 **2013:**100 **2014:**100 **2015:**100

V(I). State Defined Outcome

O. No.	Outcome Name
1	Increase in the number of food handlers (managers, supervisors, and food handling personnel from restaurants, public school and hospital cafeterias, daycare centers, nursing homes, university food service, correctional centers, civic/community groups and volunteers) who increase knowledge and skills in safe food handling practices.
2	Increase in number of home-based business entrepreneurs that increase awareness and knowledge in producing safe high acid and acidified food products.
3	Increase in number of discoveries from completed food related research projects which focus on enhancing the safety of the Nation's food supply and the development of value added foods.
4	Number of food companies who register with FDA and prepare a food biosecurity plan.
5	Food Preservation - Increase in the number of consumers that increase their knowledge on how to safely preserve foods at home.

Outcome # 1

1. Outcome Target

Increase in the number of food handlers (managers, supervisors, and food handling personnel from restaurants, public school and hospital cafeterias, daycare centers, nursing homes, university food service, correctional centers, civic/community groups and volunteers) who increase knowledge and skills in safe food handling practices.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:1120	**2012:**1120	**2013:**1220	**2014:**1220	**2015:**1200

3. Associated Knowledge Area(s)

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Increase in number of home-based business entrepreneurs that increase awareness and knowledge in producing safe high acid and acidified food products.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:150	**2012:**175	**2013:**200	**2014:**200	**2015:**200

3. Associated Knowledge Area(s)

- 502 - New and Improved Food Products
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 3

1. Outcome Target

Increase in number of discoveries from completed food related research projects which focus on enhancing the safety of the Nation's food supply and the development of value added foods.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:4	**2012:**4	**2013:**4	**2014:**4	**2015:**4

3. Associated Knowledge Area(s)

- 501 - New and Improved Food Processing Technologies

- 502 - New and Improved Food Products
- 702 - Requirements and Function of Nutrients and Other Food Components
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 4

1. Outcome Target

Number of food companies who register with FDA and prepare a food biosecurity plan.

2. Outcome Type : Change in Action Outcome Measure

2011:60	**2012:**60	**2013:**50	**2014:**50	**2015:**50

3. Associated Knowledge Area(s)

- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Food Preservation - Increase in the number of consumers that increase their knowledge on how to safely preserve foods at home.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:10	**2012:**10	**2013:**10	**2014:**10	**2015:**10

3. Associated Knowledge Area(s)

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Description

If food production facilities and/or agriculture is damaged or disturbed by a natural disaster, less food is available to be processed and consumed. This not only has an impact on local economies and access to food, but how Extension educators respond to local needs. If a natural disaster took place in Virginia, Extension educators in affected localities would likely redirect the attention and programming to assist with disaster relief for safe food/water and consumer issues. Other factors that may influence outcomes include economic changes (e.g. employment rates, disposable income and purchasing power of consumers for food, food security, purchasing patterns of consumers as they relate to Virginia foods), public policy changes (e.g. taxation of "junk foods," restrictions in food advertising toward children, changes in nutrition integrity and physical education guidelines for schools, HACCP guidelines, new regulations imposed on raw food items sold on the Internet markets), and population changes (eg. immigration, new cultural groups, new food processing needs). If economic, demographic, social, and legal characteristics change at the local and state levels, Extension educators need to respond and tailor educational programs to these changes to be competitive with other public priorities and programmatic challenges. There is also "saturation," which may occur related to overweight and obesity given the amount of current press and attention on the topic. Finally, if appropriations decline for FCS programs, it is possible that there would be fewer FCS Extension agents influencing what could be accomplished in programs for general and specific audiences.

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

1. Evaluation Studies Planned

Description

The type of evaluation study will depend on the program and activity**.**

2. Data Collection Methods

- Observation

Description

The type of data collection method depends on the program and activity. For most programs, data are gathered through on-site participant surveys. Follow-up studies with a postcard or email help determine behavior changes that continued following the class.

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Global Food Security and Hunger

2. Brief summary about Planned Program

"Food security" means that people have access, at all times, to enough food for an active, healthy life for all household members. Meeting this need globally will require that we manage ecosystems, both natural and man-made so that they produce more; use resources more efficiently; enhance soil, water, and air quality, biodiversity, and ecosystem health; and are economically viable and socially responsible. We must manage yield and quality robbing pests effectively and in ways that minimize chemical and otherwise disruptive inputs; and ensure the safe use and handling of pesticides. It will also require programs that support and enhance nutrition education targeting to populations in Virginia and worldwide**.**

3. Program existence : New (One year or less)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%	10%	10%	0%
112	Watershed Protection and Management	5%	10%	5%	0%
201	Plant Genome, Genetics, and Genetic Mechanisms	5%	10%	5%	10%
202	Plant Genetic Resources	5%	0%	5%	0%
205	Plant Management Systems	5%	20%	5%	20%
211	Insects, Mites, and Other Arthropods Affecting Plants	5%	0%	5%	0%
212	Pathogens and Nematodes Affecting Plants	5%	0%	5%	0%
216	Integrated Pest Management Systems	5%	0%	5%	0%
301	Reproductive Performance of Animals	5%	0%	5%	10%
302	Nutrient Utilization in Animals	5%	10%	5%	10%
304	Animal Genome	0%	0%	5%	0%
307	Animal Management Systems	10%	15%	5%	20%
308	Improved Animal Products (Before Harvest)	5%	0%	5%	10%
311	Animal Diseases	5%	0%	5%	10%
403	Waste Disposal, Recycling, and Reuse	5%	0%	5%	0%
601	Economics of Agricultural Production and Farm Management	5%	15%	5%	10%
605	Natural Resource and Environmental Economics	5%	0%	5%	0%
704	Nutrition and Hunger in the Population	5%	10%	5%	0%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	5%	0%	5%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Renewed efforts and a global vision are needed to guide our programs into the new millennium and to meet the nutritional needs of an expanding population. We must improve the global capacity for food production to meet the growing demand, and foster innovation in fighting hunger by addressing food security for vulnerable populations. To achieve transformational change in how our programs deal with food, feed, and fiber production, as well as nutrition and health we must focus on achieving broad outcomes. Achieving these broad outcomes requires implementation of numerous ideas, projects, and developing coordinated team efforts. Our priorities will be: food safety and healthy foods; combating hunger in at-risk populations; conserving our natural resources; sustaining profitable agriculture and small businesses; profitable animal agriculture systems; protecting animal systems and cropping systems from pests and losses; profitable crop production systems; and improving quality of plant and animal products; plant and animal improvement through genetics, breeding, and genomics; provisioning of ecosystem services from natural and managed systems.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

The Planned Program assumes availability of expertise in key scientific areas including physiology and nutrition, reproduction and genetics, health, environmental issues, food quality, integrated management systems, and integrated pest management (insects, weeds, diseases). Such expertise is essential to apply best practices and achieve the needed productivity increases in these areas. Adequate resources to expand the body of knowledge pertinent to the needs of Virginia are assumed. Such resources include field and laboratory research opportunities and an ample supply of highly trained, motivated, visionary researchers and associated staff. Further, it is assumed that economic circumstances will be favorable enough to motivate clientele to change and implement new procedures or commit to change. It is expected that stakeholders and stakeholder groups will be involved with setting local priorities, and will continue to adopt best practices that are well tested scientifically and explained fully and clearly by trusted and well informed Extension personnel.

2. Ultimate goal(s) of this Program

To develop processes for managing agricultural ecosystems to result in increased productivity; to develop cropping systems that encourage more efficient use of resources that enhance soil, water, and air quality, biodiversity, and ecosystem health; to develop the most efficient and sustainable systems for monitoring and managing yield and quality robbing pests; continue state-wide programs to ensure the safe use and handling of pesticides; to always demonstrate the economically viability of new programs; and to develop and extend programs that support and enhance nutrition education.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2011	107.2	9.0	97.7	8.5
2012	109.0	10.0	99.3	8.5
2013	110.7	10.0	100.9	8.5
2014	112.5	10.0	102.5	8.5
2015	112.5	10.0	102.5	8.5

V(F). Planned Program (Activity)

1. Activity for the Program

Establish partnerships with and stakeholder input to identify needs and develop solutions;
Conduct research experiments that lead to solutions of applied problems;
Conduct workshops, both traditional and hands-on, and meetings to provide training for stakeholders and educators;

Develop products, tools, curriculum, and innovative information delivery processes for use by educators and directly by producers/clientele;
Organize and conduct state and regional conferences;
Partner with industry to incorporate cutting edge technologies into research and extension programs;
Conduct needs assessment and impact analyses.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● Web sites
● Demonstrations	

3. Description of targeted audience

Extension educators
Industry personnel
Commercial producers
Consumers
Policy makers
Master Gardeners
Product end users
Academic colleagues
Students
K-12 educators
Pesticide applicators
Homeowners

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	332000	522000	74000	18000
2012	332000	522000	74000	18000
2013	332000	522000	74000	18000
2014	332000	522000	74000	18000
2015	5000	522000	74000	18000

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

2011:3 **2012:**3 **2013:**3 **2014:**3 **2015:**3

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2011	142	46	188
2012	144	47	191
2013	144	47	191
2014	144	47	191
2015	144	47	191

V(H). State Defined Outputs

1. Output Target

- Number of farmers creating succession/transition plans for their farm business

2011:50 **2012:**50 **2013:**50 **2014:**50 **2015:**50

- Number of education programs conducted in farm and agribusiness management and risk management

2011:20 **2012:**20 **2013:**20 **2014:**20 **2015:**20

- Number of education programs conducted in marketing and direct marketing

2011:20 **2012:**20 **2013:**20 **2014:**20 **2015:**20

- Number of agriculture systems educator training workshops.

2011:25 **2012:**25 **2013:**25 **2014:**25 **2015:**25

- Number of agriculture systems field research experiments

2011:35 **2012:**35 **2013:**40 **2014:**40 **2015:**50

- Number of agriculture systems on-farm demonstrations

2011:25 **2012:**25 **2013:**25 **2014:**25 **2015:**25

- Number of agriculture systems producer training workshops

2011:230 **2012:**240 **2013:**250 **2014:**250 **2015:**250

- Number of non-peer reviewed outreach citations incorporating information on the most effective IPM strategies and systems for use on selected commodities and/or at selected sites

2011:125 **2012:**125 **2013:**125 **2014:**125 **2015:**100

- Number of private applicators trained for certification

2011:750 **2012:**750 **2013:**750 **2014:**750 **2015:**750

- Number of commercial applicators trained for certification

2011:750 **2012:**750 **2013:**750 **2014:**750 **2015:**750

- Number of private applicators trained for recertification

2011:2000 **2012:**2000 **2013:**2000 **2014:**2000 **2015:**2000

- Number of commercial applicators trained for recertification

2011:1000 **2012:**1000 **2013:**1000 **2014:**1000 **2015:**1000

- Number of non-certified applicators trained

2011:2000 **2012:**2000 **2013:**2000 **2014:**2000 **2015:**2000

- Number of stakeholders enrolled in the IPM Stakeholder Network

2011:100 **2012:**100 **2013:**100 **2014:**100 **2015:**100

- Number of trainers and regulatory officials trained

2011:300 **2012:**300 **2013:**300 **2014:**300 **2015:**300

- Educational media website hits communicated through the Pesticide Safety Education website

2011:1000000 **2012:**1000000 **2013:**1000000 **2014:**1000000 **2015:**1000000

- Number of non-peer reviewed research citations incorporating information on the most effective IPM strategies and systems for use on selected commodities and/or at selected sites.

2011:250 **2012:**250 **2013:**250 **2014:**250 **2015:**100

- Number of presentations on IPM related topics.

2011:500 **2012:**500 **2013:**500 **2014:**500 **2015:**500

- Number of volunteer hours dedicated to pest management programming

2011:8000 **2012:**8000 **2013:**8000 **2014:**8000 **2015:**5000

- Number of extended learners with four or more hours of contact related to pest management

2011:10000 **2012:**10000 **2013:**8000 **2014:**5000 **2015:**5000

- Amount of revenue generated in dollars for pest management Extension and research programming

2011:1000000 **2012:**1000000 **2013:**1000000 **2014:**1000000 **2015:**1000000

- IPM publications for clientele including extension publications, manuals and guides, multi-media pieces, websites, newspaper and trade journal articles, and papers provided at production meetings and field days.

2011:600 **2012:**600 **2013:**600 **2014:**600 **2015:**500

- Number of samples evaluated by current and improved plant diagnostic methods

2011:1200 **2012:**1200 **2013:**1200 **2014:**1200 **2015:**1200

- Number of plants and plant products educational presentations conducted

2011:600 **2012:**600 **2013:**600 **2014:**600 **2015:**600

- Number of plants and plant products volunteers

2011:5000 **2012:**5400 **2013:**5500 **2014:**5600 **2015:**5700

- Number of plants and plant products research citations

2011:90 **2012:**95 **2013:**100 **2014:**105 **2015:**110

- Number of plants and plant products extension/outreach citations

2011:400 **2012:**400 **2013:**400 **2014:**400 **2015:**400

- Number of programs offered regarding community food systems.

2011:12 **2012:**12 **2013:**12 **2014:**12 **2015:**12

- Number of existing and future nutrient management planners and educators trained

2011:400 **2012:**400 **2013:**400 **2014:**400 **2015:**400

- Number of animals and animal products educational meetings, workshops, conferences, training sessions, and field days

2011:600 **2012:**600 **2013:**600 **2014:**600 **2015:**600

- Number of animals and animal products fact sheets, publications, newsletters, and other print resources

2011:750 **2012:**750 **2013:**750 **2014:**750 **2015:**750

- Number of animal and animal products web sites, applications, and modules

2011:40 **2012:**40 **2013:**40 **2014:**40 **2015:**40

- Number of biotechnology and genomics research projects in program areas

2011:25 **2012:**30 **2013:**35 **2014:**35 **2015:**35

- Number of peer reviewed biotechnology and genomics research papers published

2011:50 **2012:**55 **2013:**60 **2014:**65 **2015:**65

- Number of biotechnology and genomics presentations

2011:55 **2012:**60 **2013:**65 **2014:**70 **2015:**70

- Number of non-peer-reviewed biotechnology and genomics publications

2011:30 **2012:**35 **2013:**40 **2014:**45 **2015:**45

V(I). State Defined Outcome

O. No.	Outcome Name
1	Increase the number of land owners who implement transition plans.
2	Increase the number of program participants (farmers, agricultural business managers and leaders, food processors, government agencies, and agribusiness firms) making more informed business and economic decisions.
3	Increase the number of adult participants who report that they ran out of food less often after participating in the Family Nutrition Program.
4	Percent increase in gross income from agriculture attributable to extension efforts.
5	Increase in farms and acres subject to organic management due to extension programming efforts which will increase overall profitability of organic agriculture (total annual sales).
6	Increase in the amount of agricultural land under best management practices due to extension programming efforts.
7	Increase in the number of individuals improving water quality and reducing erosion through participation in an advanced grazing system program.
8	Increase in the number of nutrient management plans, resulting in more efficient utilization of nutrients, and in the number of plan writers trained by Extension.
9	Increase the profitability (total annual sales) of small, part-time and limited resource farmers through sustainable production of specialty agriculture crops and livestock products.
10	Number of individuals gaining knowledge of IPM through training course completion and/or examination
11	Number of applicators who gain knowledge in pesticide safety through certification training and pass the state certification exam(s)

O. No.	Outcome Name
12	Number of applicators who gain additional knowledge in pesticide safety through re-certification training and sufficient credit to maintain their certification
13	Number of applicators, farm workers, and the general public who gain knowledge in general pesticide safety who are not seeking certification as pesticide applicators
14	Number of trainers who gain knowledge in pesticide safety and pesticide curriculum and program training in established train-the-trainer workshops
15	Number of pesticide drift violations prosecuted by VDACS remains at 10 or below.
16	Threshold number of personal protective equipment violations prosecuted by VDACS
17	Through educational programming and collaborative efforts, support the collection and proper disposal of unwanted pesticides in Virginia localities.
18	Number of localities participating in a pesticide container recycling program.
19	Number of participants gaining knowledge about invasive NIS
20	Increase the number of stakeholders collaborating with pest management strategic planning activities -- which support the communication of the pest management needs of Virginia and regional agricultural interests to pesticide regulatory policymakers.
21	Increase in the number of facilities that are impacted in a positive way by IPM program activities.
22	Number of Virginia soybean growers aware of Asian soybean rust risk to their crop.
23	Number of Virginia soybean growers who apply fungicide based on Asian soybean rust detection activities
24	Increase the number of commercial producers educated about new plants, cultivated varieties, production techniques or BMPs
25	Increase the number of commercial producers adopting new plants, cultivated varieties, production techniques, or BMPs
26	Increase the number of noncommercial gardeners/producers educated about new techniques or BMPs
27	Increase the number of noncommercial gardeners adopting new techniques or BMPs
28	Number of new cultivated varieties released
29	Increased number of acres dedicated to vegetable and berry specialty crops to enhance agricultural profitability.
30	Increase in the number of commercial producers educated about the reuse, recycling and utilization alternatives for agricultural plastics.
31	Increase the yield, input efficiency (fertilizer, fungicides, insecticides, herbicides, irrigation, etc.), and profit for Virginia vegetable farmers.
32	Local Food Systems - Increase the number of local communities partnering with Virginia Cooperative Extension faculty to strengthen the connection between local agriculture producers and growers with local food-related businesses and purchasing institutions.
33	Number of community gardening programs implemented to address food insecurity/hunger issues
34	Percent increase in beef cattle marketed through value-added programs

O. No.	Outcome Name
35	Number of additional beef producers trained and certified for quality assurance/best management practices
36	Percent of participating farms reducing phosphorus over previous year in dairy animal waste
37	Number of dairy herds improving milk quality by culturing quarter milk samples and implementing mastitis control procedures.
38	Number of swine producers receiving continuing education credit for waste management permit requirements
39	Number of youth adopting best practices related to animal agriculture through youth animal projects and events
40	Percent increase in sheep population in Southwest Virginia as a result of favorable lamb marketing arrangements
41	Number of program participants acquiring knowledge on best management practices related to equine.
42	Percent increase in freshwater shrimp production by Virginia farmers utilizing best management practices
43	Percent increase in sales of pond raised fish due to adoption of best management practices.
44	Increased fish production via recirculating aquaculture system (RAS) and pond production techniques through innovative research and dissemination and application of results through VCE programming to producers.
45	Number of individuals who gain knowledge to improve small ruminant production.
46	Number of commercial poultry growers adopting biosecurity practices to lower the risk of disease transmission
47	Number of projects addressing genetic improvement of aquaculture stocks
48	Number of projects to reduce impact of biotic and abiotic factors on food security
49	Number of projects to improve quality of food crop plants through genetic and metabolomic research
50	Projects manipulating genomes of insects vectoring diseases

Outcome # 1

1. Outcome Target

Increase the number of land owners who implement transition plans.

2. Outcome Type : Change in Action Outcome Measure

2011:60 **2012:**60 **2013:**60 **2014:**60 **2015:**60

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

- 1890 Extension

Outcome # 2

1. Outcome Target

Increase the number of program participants (farmers, agricultural business managers and leaders, food processors, government agencies, and agribusiness firms) making more informed business and economic decisions.

2. Outcome Type : Change in Action Outcome Measure

2011:60	**2012:**60	**2013:**60	**2014:**60	**2015:**60

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 3

1. Outcome Target

Increase the number of adult participants who report that they ran out of food less often after participating in the Family Nutrition Program.

2. Outcome Type : Change in Condition Outcome Measure

2011:2175	**2012:**2240	**2013:**2300	**2014:**2375	**2015:**2440

3. Associated Knowledge Area(s)

- 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

Percent increase in gross income from agriculture attributable to extension efforts.

2. Outcome Type : Change in Condition Outcome Measure

2011:5	**2012:**7	**2013:**7	**2014:**7	**2015:**7

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems

- 307 - Animal Management Systems
- 601 - Economics of Agricultural Production and Farm Management
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 5

1. Outcome Target

Increase in farms and acres subject to organic management due to extension programming efforts which will increase overall profitability of organic agriculture (total annual sales).

2. Outcome Type : Change in Condition Outcome Measure

2011:5000000	**2012:**6000000	**2013:**6500000	**2014:**6500000	**2015:**6500000

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 112 - Watershed Protection and Management
- 205 - Plant Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 6

1. Outcome Target

Increase in the amount of agricultural land under best management practices due to extension programming efforts.

2. Outcome Type : Change in Action Outcome Measure

2011:380000	**2012:**400000	**2013:**500000	**2014:**500000	**2015:**500000

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems
- 403 - Waste Disposal, Recycling, and Reuse
- 601 - Economics of Agricultural Production and Farm Management
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 7

1. Outcome Target

Increase in the number of individuals improving water quality and reducing erosion through participation in an advanced grazing system program.

2. Outcome Type : Change in Action Outcome Measure

2011:250000	**2012:**280000	**2013:**310000	**2014:**340000	**2015:**340000

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 112 - Watershed Protection and Management
- 205 - Plant Management Systems
- 307 - Animal Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 8

1. Outcome Target

Increase in the number of nutrient management plans, resulting in more efficient utilization of nutrients, and in the number of plan writers trained by Extension.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:220	**2012:**240	**2013:**300	**2014:**300	**2015:**300

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 112 - Watershed Protection and Management
- 205 - Plant Management Systems
- 307 - Animal Management Systems
- 403 - Waste Disposal, Recycling, and Reuse
- 601 - Economics of Agricultural Production and Farm Management
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 9

1. Outcome Target

Increase the profitability (total annual sales) of small, part-time and limited resource farmers through sustainable production of specialty agriculture crops and livestock products.

2. Outcome Type : Change in Condition Outcome Measure

2011:3000000	**2012:**3250000	**2013:**3250000	**2014:**3250000	**2015:**3250000

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 307 - Animal Management Systems
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 10

1. Outcome Target

Number of individuals gaining knowledge of IPM through training course completion and/or examination

2. Outcome Type : Change in Knowledge Outcome Measure

2011:2000	**2012:**2000	**2013:**2000	**2014:**2000	**2015:**2000

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 11

1. Outcome Target

Number of applicators who gain knowledge in pesticide safety through certification training and pass the state certification exam(s)

2. Outcome Type : Change in Knowledge Outcome Measure

2011:1000	**2012:**1000	**2013:**1000	**2014:**1000	**2015:**1000

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 12

1. Outcome Target

Number of applicators who gain additional knowledge in pesticide safety through re-certification training and sufficient credit to maintain their certification

2. Outcome Type : Change in Knowledge Outcome Measure

2011:4000	**2012:**4000	**2013:**4000	**2014:**4000	**2015:**4000

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 13

1. Outcome Target

Number of applicators, farm workers, and the general public who gain knowledge in general pesticide safety who are not seeking certification as pesticide applicators

2. Outcome Type : Change in Knowledge Outcome Measure

2011:950	**2012:**950	**2013:**950	**2014:**950	**2015:**950

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension
- 1890 Research

Outcome # 14

1. Outcome Target

Number of trainers who gain knowledge in pesticide safety and pesticide curriculum and program training in established train-the-trainer workshops

2. Outcome Type : Change in Knowledge Outcome Measure

2011:100	**2012:**100	**2013:**100	**2014:**100	**2015:**100

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 15

1. Outcome Target

Number of pesticide drift violations prosecuted by VDACS remains at 10 or below.

2. Outcome Type : Change in Condition Outcome Measure

2011:10	**2012:**10	**2013:**10	**2014:**10	**2015:**10

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 16

1. Outcome Target

Threshold number of personal protective equipment violations prosecuted by VDACS

2. Outcome Type : Change in Condition Outcome Measure

2011:20	**2012:**20	**2013:**20	**2014:**20	**2015:**20

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 17

1. Outcome Target

Through educational programming and collaborative efforts, support the collection and proper disposal of unwanted pesticides in Virginia localities.

2. Outcome Type : Change in Action Outcome Measure

2011:20	**2012:**20	**2013:**20	**2014:**20	**2015:**20

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 18

1. Outcome Target

Number of localities participating in a pesticide container recycling program.

2. Outcome Type : Change in Action Outcome Measure

2011:10	**2012:**10	**2013:**10	**2014:**10	**2015:**10

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 19

1. Outcome Target

Number of participants gaining knowledge about invasive NIS

2. Outcome Type : Change in Knowledge Outcome Measure

2011:275	**2012:**300	**2013:**300	**2014:**300	**2015:**300

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 20

1. Outcome Target

Increase the number of stakeholders collaborating with pest management strategic planning activities -- which support the communication of the pest management needs of Virginia and regional agricultural interests to pesticide regulatory policymakers.

2. Outcome Type : Change in Action Outcome Measure

2011:25	**2012:**25	**2013:**25	**2014:**25	**2015:**25

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants

- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 21

1. Outcome Target

Increase in the number of facilities that are impacted in a positive way by IPM program activities.

2. Outcome Type : Change in Action Outcome Measure

2011:25	**2012:**25	**2013:**25	**2014:**25	**2015:**25

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 22

1. Outcome Target

Number of Virginia soybean growers aware of Asian soybean rust risk to their crop.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:200	**2012:**200	**2013:**200	**2014:**200	**2015:**200

3. Associated Knowledge Area(s)

- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 23

1. Outcome Target

Number of Virginia soybean growers who apply fungicide based on Asian soybean rust detection activities

2. Outcome Type : Change in Action Outcome Measure

2011:150	**2012:**150	**2013:**150	**2014:**150	**2015:**150

3. Associated Knowledge Area(s)

- 212 - Pathogens and Nematodes Affecting Plants

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 24

1. Outcome Target

Increase the number of commercial producers educated about new plants, cultivated varieties, production techniques or BMPs

2. Outcome Type : Change in Knowledge Outcome Measure

2011:11113	**2012:**11247	**2013:**11397	**2014:**11500	**2015:**12000

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse
- 601 - Economics of Agricultural Production and Farm Management
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension
- 1890 Research

Outcome # 25

1. Outcome Target

Increase the number of commercial producers adopting new plants, cultivated varieties, production techniques, or BMPs

2. Outcome Type : Change in Action Outcome Measure

2011:800	**2012:**900	**2013:**1000	**2014:**1100	**2015:**1200

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension
- 1890 Research

Outcome # 26

1. Outcome Target

Increase the number of noncommercial gardeners/producers educated about new techniques or BMPs

2. Outcome Type : Change in Knowledge Outcome Measure

2011:310000	**2012:**320000	**2013:**330000	**2014:**340000	**2015:**350000

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 27

1. Outcome Target

Increase the number of noncommercial gardeners adopting new techniques or BMPs

2. Outcome Type : Change in Action Outcome Measure

2011:1500	**2012:**1700	**2013:**1900	**2014:**2100	**2015:**2300

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

Outcome # 28

1. Outcome Target

Number of new cultivated varieties released

2. Outcome Type : Change in Action Outcome Measure

2011:5	**2012:**5	**2013:**5	**2014:**5	**2015:**5

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources
- 216 - Integrated Pest Management Systems
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Research

Outcome # 29

1. Outcome Target

Increased number of acres dedicated to vegetable and berry specialty crops to enhance agricultural profitability.

2. Outcome Type : Change in Condition Outcome Measure

2011:29088	**2012:**29338	**2013:**29588	**2014:**28838	**2015:**30136

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 216 - Integrated Pest Management Systems
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension
- 1890 Research

Outcome # 30

1. Outcome Target

Increase in the number of commercial producers educated about the reuse, recycling and utilization alternatives for agricultural plastics.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:10	**2012:**10	**2013:**10	**2014:**10	**2015:**10

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 31

1. Outcome Target

Increase the yield, input efficiency (fertilizer, fungicides, insecticides, herbicides, irrigation, etc.), and profit for Virginia vegetable farmers.

2. Outcome Type : Change in Condition Outcome Measure

2011:10	**2012:**10	**2013:**10	**2014:**10	**2015:**10

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 32

1. Outcome Target

Local Food Systems - Increase the number of local communities partnering with Virginia Cooperative Extension faculty to strengthen the connection between local agriculture producers and growers with local food-related businesses and purchasing institutions.

2. Outcome Type : Change in Action Outcome Measure

2011:3	**2012:**3	**2013:**3	**2014:**3	**2015:**3

3. Associated Knowledge Area(s)

- 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 33

1. Outcome Target

Number of community gardening programs implemented to address food insecurity/hunger issues

2. Outcome Type : Change in Knowledge Outcome Measure

2011:8	**2012:**8	**2013:**9	**2014:**9	**2015:**9

3. Associated Knowledge Area(s)

- 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 34

1. Outcome Target

Percent increase in beef cattle marketed through value-added programs

2. Outcome Type : Change in Action Outcome Measure

2011:5	**2012:**5	**2013:**5	**2014:**5	**2015:**5

3. Associated Knowledge Area(s)

- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 35

1. Outcome Target

Number of additional beef producers trained and certified for quality assurance/best management practices

2. Outcome Type : Change in Action Outcome Measure

2011:100	**2012:**100	**2013:**100	**2014:**100	**2015:**100

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 36

1. Outcome Target

Percent of participating farms reducing phosphorus over previous year in dairy animal waste

2. Outcome Type : Change in Condition Outcome Measure

2011:10	**2012:**10	**2013:**10	**2014:**10	**2015:**10

3. Associated Knowledge Area(s)

- 302 - Nutrient Utilization in Animals
- 307 - Animal Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 37

1. Outcome Target

Number of dairy herds improving milk quality by culturing quarter milk samples and implementing mastitis control procedures.

2. Outcome Type : Change in Condition Outcome Measure

2011:20	**2012:**20	**2013:**20	**2014:**20	**2015:**20

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 38

1. Outcome Target

Number of swine producers receiving continuing education credit for waste management permit requirements

2. Outcome Type : Change in Action Outcome Measure

2011:25	**2012:**25	**2013:**25	**2014:**25	**2015:**25

3. Associated Knowledge Area(s)

- 302 - Nutrient Utilization in Animals

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 39

1. Outcome Target

Number of youth adopting best practices related to animal agriculture through youth animal projects and events

2. Outcome Type : Change in Knowledge Outcome Measure

2011:27000	**2012:**27000	**2013:**27000	**2014:**27000	**2015:**27000

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 40

1. Outcome Target

Percent increase in sheep population in Southwest Virginia as a result of favorable lamb marketing arrangements

2. Outcome Type : Change in Condition Outcome Measure

2011:5	**2012:**5	**2013:**5	**2014:**5	**2015:**5

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 41

1. Outcome Target

Number of program participants acquiring knowledge on best management practices related to equine.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:500	**2012:**500	**2013:**500	**2014:**500	**2015:**500

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 42

1. Outcome Target

Percent increase in freshwater shrimp production by Virginia farmers utilizing best management practices

2. Outcome Type : Change in Knowledge Outcome Measure

2011:5	**2012:**5	**2013:**5	**2014:**5	**2015:**5

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 43

1. Outcome Target

Percent increase in sales of pond raised fish due to adoption of best management practices.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:5	**2012:**5	**2013:**5	**2014:**5	**2015:**5

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)

4. Associated Institute Type(s)

- 1890 Extension

Outcome # 44

1. Outcome Target

Increased fish production via recirculating aquaculture system (RAS) and pond production techniques through innovative research and dissemination and application of results through VCE programming to producers.

2. Outcome Type : Change in Action Outcome Measure

2011:5	**2012:**5	**2013:**5	**2014:**5	**2015:**5

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems
- 311 - Animal Diseases

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension
- 1890 Research

Outcome # 45

1. Outcome Target

Number of individuals who gain knowledge to improve small ruminant production.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:100	**2012:**100	**2013:**100	**2014:**100	**2015:**100

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 46

1. Outcome Target

Number of commercial poultry growers adopting biosecurity practices to lower the risk of disease transmission

2. Outcome Type : Change in Action Outcome Measure

2011:200	**2012:**200	**2013:**200	**2014:**200	**2015:**200

3. Associated Knowledge Area(s)

- 311 - Animal Diseases

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 47

1. Outcome Target

Number of projects addressing genetic improvement of aquaculture stocks

2. Outcome Type : Change in Knowledge Outcome Measure

2011:1	**2012:**1	**2013:**1	**2014:**1	**2015:**1

3. Associated Knowledge Area(s)

- 304 - Animal Genome

4. Associated Institute Type(s)

- 1862 Research

Outcome # 48

1. Outcome Target

Number of projects to reduce impact of biotic and abiotic factors on food security

2. Outcome Type : Change in Knowledge Outcome Measure

2011:1	**2012:**1	**2013:**1	**2014:**1	**2015:**1

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 212 - Pathogens and Nematodes Affecting Plants
- 304 - Animal Genome

4. Associated Institute Type(s)

- 1862 Research

Outcome # 49

1. Outcome Target

Number of projects to improve quality of food crop plants through genetic and metabolomic research

2. Outcome Type : Change in Knowledge Outcome Measure

2011:1	**2012:**1	**2013:**1	**2014:**1	**2015:**1

3. Associated Knowledge Area(s)

- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources

4. Associated Institute Type(s)

- 1862 Research

Outcome # 50

1. Outcome Target

Projects manipulating genomes of insects vectoring diseases

2. Outcome Type : Change in Knowledge Outcome Measure

2011:1	**2012:**1	**2013:**1	**2014:**1	**2015:**1

3. Associated Knowledge Area(s)

- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 211 - Insects, Mites, and Other Arthropods Affecting Plants

- 212 - Pathogens and Nematodes Affecting Plants

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

{NO DATA ENTERED}

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Comparisons between program participants (individuals, group, organizations) and non-participants

Description

Data collection methods will vary by local program and variation and innovation in methods used to determine program impact are encouraged. Program successes will be evaluated using clientele surveys, input from key stakeholder groups, and monitoring hotlines and web sites and results published by other agencies including the Virginia Ag Statistics Service, USDA ERS and others.

2. Data Collection Methods

- Sampling
- Whole population
- Mail
- Telephone
- Unstructured
- Case Study
- Observation
- Tests
- Other (state and federal agency data)

Description

Tools will include program evaluations with questions measuring changes in attitudes and future behavior, pre- and post-tests and user surveys and stakeholder focus groups will be used to establish needs and improve program quality. These tools will be used to evaluate the impacts and outcomes of the program.

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Sustainable Energy

2. Brief summary about Planned Program

Conduct research and extension programming that educates and explores issues related to renewable energy systems, energy efficiency, feedstock cultivation, efficient harvesting and storage of biomass, network analysis to optimize logistics and minimize delivery costs, and exploration of the consequences of specific policy initiatives. This program includes laboratory research, development of pilot scale projects in the field, educating clientele on the merits of particular energy practices and conversion technologies, and engaging the private sector to spur the commercialization and economic development of innovative and efficient energy systems.

3. Program existence : New (One year or less)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
112	Watershed Protection and Management	10%	10%	10%	0%
124	Urban Forestry	10%	10%	10%	0%
132	Weather and Climate	10%	10%	10%	0%
206	Basic Plant Biology	10%	10%	10%	0%
402	Engineering Systems and Equipment	10%	10%	10%	0%
403	Waste Disposal, Recycling, and Reuse	10%	10%	10%	0%
511	New and Improved Non-Food Products and Processes	10%	10%	10%	0%
601	Economics of Agricultural Production and Farm Management	10%	10%	10%	0%
605	Natural Resource and Environmental Economics	10%	10%	10%	0%
610	Domestic Policy Analysis	10%	10%	10%	0%
	Total	100%	100%	100%	0%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Due to rising energy prices, climate change, and energy security issues, many citizens are concerned that our nation has become too dependent on foreign sources of petroleum and are troubled by the impacts that this dependence has created. In response to these issues, the federal government recently signed into law the Renewable Fuels, Consumer Protection, and Energy Efficiency Act of 2007. This Act seeks to move the United States toward greater energy

independence and security and promote the production of renewable fuels. Additionally, the Commonwealth announced in the 2007 Virginia Energy Plan a nonbinding goal of reducing statewide carbon dioxide emissions 30% by the year 2025. These policies are indicative of a broader interest to sustainably increase our energy independence while mitigating climate change. Virginians are particularly interested in evaluating the use of residual biomass as an integral component to future renewable energy production. Agricultural operations in Virginia are facing substantial structural changes and challenges due to rapid urbanization, intensified competition, and increased environmental regulation.

Finding a novel way to utilize the byproducts created from agriculture and other sources has the potential to convert waste streams into revenue streams. This potential can be realized through developing new value-added products such as biofuels, bioenergy, biopolymers, compost, functional foods, and pharmaceuticals.

For generations American farmers have led the world in producing food, feed and fiber. Now, for a variety of reasons, farmers are also being asked to produce fuel for our nation. Faculty from Virginia Tech and Virginia Cooperative Extension explore opportunities to enhance sustainable energy. A critical component to this systems based approach to bioenergy development is to better understand feedstock production from the farmers' perspective. The reliable sourcing of a continuous supply of feedstock to feed a biorefinery is also a key concern, not just the adjacency to rail lines or adequate water supplies.

Conversely, farms are not without ongoing economic challenges and seek innovative ways to remain viable and maintain the competitive advantage. New technologies, products, and markets are being developed to create new sources of revenue critical to fortifying the existing multi-million dollar farming industry. In 2007, Virginia farmers spent nearly $210 million dollars in energy related production expenses. For decades, farmers have realized higher yields per acre because of increased crop production efficiency resulting in economic benefits for the farmer, the agricultural community, and world population. Today, it is equally critical for farmers to increase production while minimizing energy inputs. Implementing energy efficiency technologies will reduce costs and increase farm profitability. For example, a 10% increase in energy efficiency, without affecting crop yield, would have produced nearly $21 million in additional revenue to Virginia farmers in 2007.

2. Scope of the Program

- In-State Extension
- In-State Research
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

To move toward a more sustainable energy system will require more research and extension programming. Research must focus on increasing energy use efficiency, design of energy efficient systems/units/utilities, improved feedstock cultivation, efficient harvesting and storage of biomass, network analysis to optimize logistics and minimize delivery costs, development of genetically enhanced and engineered plant materials, exploration of the consequences of specific policy initiatives, and other aspects critical to the development, design, and deployment of sustainable energy systems. Extension efforts must focus on the development of programming and materials to inform the public of the new research efforts based on facts discovered and also inform the researchers of the needs of the public to direct their investigations. Extension work should also direct more efforts on energy conservation education. The Land Grant system is uniquely poised to facilitate the high level of iterative communication between Research and Extension that is required to develop sustainable energy systems, such as: biomass used for biofuels, design of optimum forestry practices and crops for bioenergy production, and the production of value-added bio-based industrial products and materials.

2. Ultimate goal(s) of this Program

This comprehensive program will work to promote energy efficient systems, renewable energy production, and evaluate policy effectiveness to promoting sustainable domestic energy generation to increase the economic competitiveness and longterm sustainability of Virginia production systems.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2011	10.9	0.5	5.4	0.0
2012	11.1	1.0	5.5	0.0
2013	11.3	1.0	5.5	0.0
2014	11.4	1.0	5.6	0.0
2015	11.4	1.0	5.6	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

The Sustainable Energy program includes laboratory research, development of pilot scale projects in the field, educating clientele on the merits of particular energy practices and conversion technologies, and engaging the private sector to spur the commercialization and economic development of innovative and efficient energy systems. Specific examples of activity areas of this program are listed below:

- Develop biomass use for biofuels
- Designing optimum forestry and crops for bioenergy production.
- Produce value-added bio-based industrial products.
- Logistics/material handling
- Processing and management of end use waste products and byproducts
- Analysis of the global impacts of new generation biofuels
- Demonstration and commercialization of technologies that increase US energy independence
- Development of programs to train students and current county educators (in-service) to meet the new sustainable energy challenges.
- Energy conservation
- Alternative energy
- Understanding agricultural energy use and opportunities for conservation
- Smart and sustainable energy systems for communities
- Understanding the cost differences of energy usage
- Public outreach and engagement around energy public policy development
- Youth development programs to teach energy conservation, alternative energy sources, electricity and recycling.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● Web sites
● Demonstrations	● Other 1 (You Tube)

3. Description of targeted audience

Farmers, Citizens, K-12, 4-H Youth, agency personnel, Extension educators, policy makers, economic developers, regional planners, business

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	30000	45000	6000	1500
2012	30000	45000	6000	1500
2013	30000	45000	6000	1500
2014	30000	45000	6000	1500
2015	30000	45000	6000	1500

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

2011:2 **2012:**2 **2013:**2 **2014:**2 **2015:**3

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2011	24	16	40
2012	24	16	40
2013	24	16	40
2014	24	16	40
2015	24	16	40

V(H). State Defined Outputs

1. Output Target

- Train the Trainer and Inservice Energy Workshops

  2011:12 **2012:**12 **2013:**12 **2014:**12 **2015:**12

- Number of On-farm Demonstrations

  2011:6 **2012:**6 **2013:**6 **2014:**6 **2015:**6

- Bioenergy Featured Case Studies

  2011:4 **2012:**4 **2013:**4 **2014:**4 **2015:**4

V(I). State Defined Outcome

O. No.	Outcome Name
1	Increase farm profitability due to more energy efficient practices
2	Increase the number of individuals using energy more sustainably
3	Increase the number of sustainable energy products
4	Percent increase in the optimization of logistics management for sustainable energy systems
5	Increase number of enterprise budgets related to sustainable energy development

Outcome # 1

1. Outcome Target

Increase farm profitability due to more energy efficient practices

2. Outcome Type : Change in Condition Outcome Measure

2011:	**2012:**	**2013:**	**2014:**	**2015:**
2	2	2	2	2

3. Associated Knowledge Area(s)

- 402 - Engineering Systems and Equipment
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 2

1. Outcome Target

Increase the number of individuals using energy more sustainably

2. Outcome Type : Change in Action Outcome Measure

2011:	**2012:**	**2013:**	**2014:**	**2015:**
400000	400000	400000	400000	400000

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 124 - Urban Forestry
- 132 - Weather and Climate
- 206 - Basic Plant Biology
- 402 - Engineering Systems and Equipment
- 403 - Waste Disposal, Recycling, and Reuse
- 511 - New and Improved Non-Food Products and Processes
- 601 - Economics of Agricultural Production and Farm Management
- 605 - Natural Resource and Environmental Economics
- 610 - Domestic Policy Analysis

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 3

1. Outcome Target

Increase the number of sustainable energy products

2. Outcome Type : Change in Knowledge Outcome Measure

2011:5	**2012:**5	**2013:**5	**2014:**5	**2015:**5

3. Associated Knowledge Area(s)

- 206 - Basic Plant Biology
- 402 - Engineering Systems and Equipment

4. Associated Institute Type(s)

- 1862 Research

Outcome # 4

1. Outcome Target

Percent increase in the optimization of logistics management for sustainable energy systems

2. Outcome Type : Change in Knowledge Outcome Measure

2011:10	**2012:**10	**2013:**10	**2014:**10	**2015:**10

3. Associated Knowledge Area(s)

- 402 - Engineering Systems and Equipment
- 601 - Economics of Agricultural Production and Farm Management
- 610 - Domestic Policy Analysis

4. Associated Institute Type(s)

- 1862 Research

Outcome # 5

1. Outcome Target

Increase number of enterprise budgets related to sustainable energy development

2. Outcome Type : Change in Knowledge Outcome Measure

2011:1	**2012:**2	**2013:**2	**2014:**2	**2015:**2

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 605 - Natural Resource and Environmental Economics
- 610 - Domestic Policy Analysis

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations

Description

Volatile energy prices and the prospect of new carbon policies have heightened awareness of the importance of sustainable energy systems. The recent economic downturn has forced many producers into survival mode. Some producers are more interested than ever to explore energy efficient production systems to control cost and improve their competitiveness, however, financing some of these equipment upgrades and improvements can be a challenge.

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

1. Evaluation Studies Planned

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

Description

The evaluation process for the sustainable energy program will include: brief surveys of participants' knowledge before and after an educational session which focuses on specific aspects of sustainable energy management, poll surveys conducted post webinar sessions, informal evaluation of feedback and comments submitted during programs, and case studies.

2. Data Collection Methods

- Sampling
- On-Site
- Structured
- Unstructured
- Case Study
- Observation
- Portfolio Reviews
- Tests
- Other (Energy Assessments)

Description

Tailored metrics will be established to assess the long term program impact. This will be accomplished at the macro level by mining data from existing sources (i.e., Ag Census, etc.), and at the producer level by evaluating changes, analyzed in the aggregate via case studies, in energy use based on the utility bills of program participants.

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Youth Development

2. Brief summary about Planned Program

4-H is the youth development education program of Virginia Cooperative Extension. 4-H is rich with learning experiences where young people partner with caring adults and volunteers in a fellowship unlike any other program available to youth today. Through 4-H, young people are encouraged to participate in a variety of activities that emphasize 4-H's "learning by doing" philosophy of youth development.

Standing for head, heart, hands, and health, 4-H uses more than a century of experience in youth development programming to build strong, confident leaders. Young people in the 4-H community learn leadership, citizenship, and a vast array of life skills that benefit them for the rest of their lives. Through school-based, after-school, and community clubs as well as camp settings, 4-H members pledge to build a better community, country, and world.

4-H participants are youth, ages 5 to 19, taking part in programs provided as the result of actions planned and initiated by Extension personnel in cooperation with volunteers. With a direct connection to research at Virginia's land-grant universities, Virginia Tech and Virginia State University, 4-H is the first experience many young people have with higher education. 4-H is characterized as being community-centered, volunteer-led, Extension-staff supervised, research-based, home- and family-oriented, publicly and privately funded, and responsive to change.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development	100%	100%	0%	0%
	Total	100%	100%	0%	0%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

All children can grow and develop to realize their full potential. Youth and adults are confronted with a multitude of issues that affect their well-being such as child and school-aged care, at-risk youth behaviors, leadership, childhood obesity, character education, and academic enrichment. Concerns about how Virginia's youth are functioning, adjusting, and adapting to these issues have economic impacts for the Commonwealth and are backed by VCE's community situation analysis results. Further, 4-H programs for children and youth have shown positive influences on the quality of community life. It is VCE's, VT's, and VSU's responsibility to continue to apply research, educate, and provide outreach services to insure best practices that create positive youth development.

2. Scope of the Program

- In-State Extension
- Multistate Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Youth have a desire to learn life skills through experiential learning; youth need a knowledge base, appropriate tools, adequate resources, support, and ongoing evaluation and feedback to improve their lives; and youth need connection with others, opportunities to practice new skills and positive interactions with role models and mentors in a nurturing environment to contribute to positive youth development. Educational programs must be under girded by a solid research base. Finally, through engaging volunteers and program stakeholders, programs can serve as catalysts for change.

2. Ultimate goal(s) of this Program

To develop youth and adults working with those youth to realize their full potential "becoming effective, contributing citizens through participation in research-based, informal, hands-on educational experiences."

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2011	83.4	3.0	0.0	0.0
2012	84.8	3.0	0.0	0.0
2013	86.1	3.0	0.0	0.0
2014	87.5	3.0	0.0	0.0
2015	87.5	3.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Activities include entrepreneurial education, leadership, civic engagement, 4-H camping programs (overnight and day), 4-H after-school programs, 4-H in-school programs, 4-H school enrichment programs, 4-H clubs (community and military), 4-H special interest programs, 4-H Cloverbud groups, district 4-H trainings, local 4-H trainings, home school education, online education and distance learning, and specialized trainings and workshops to qualify instructors and to educate trainers.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Group Discussion	● TV Media Programs
● Other 1 (Camping, ed. program & events)	● Web sites
● Other 2 (service learning projects)	● Other 1 (E-mail, phone, newspaper)
	● Other 2 (Materials and resources)

3. Description of targeted audience

Youth between the ages of 5-19

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	130000	145000	500000	450000
2012	130000	145000	500000	450000
2013	130000	145000	500000	450000
2014	130000	145000	500000	450000
2015	130000	145000	500000	450000

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

2011:0 **2012:**0 **2013:**0 **2014:**0 **2015:**0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2011	0	3	3
2012	0	3	3
2013	0	3	3
2014	0	3	3
2015	0	3	3

V(H). State Defined Outputs

1. Output Target

- Number of trainings, educational workshops, and on-line education sessions for VCE's targeted audiences

2011:4000	**2012:**4000	**2013:**4050	**2014:**4050	**2015:**4100

- Number of fact sheets, publications and curricula on youth development.

2011:40	**2012:**40	**2013:**45	**2014:**45	**2015:**50

- Number of members enrolled in-school, after-school, community clubs, special interest activities, 4-H military programs, and camps.

2011:145000	**2012:**145000	**2013:**150000	**2014:**150000	**2015:**155000

- Number of youth engaged in leadership development education.

2011:7500	**2012:**7500	**2013:**8000	**2014:**8000	**2015:**8500

- Number of clubs where youth are involved in structured after school programming.

2011:200	**2012:**200	**2013:**225	**2014:**225	**2015:**250

V(I). State Defined Outcome

O. No.	Outcome Name
1	4-H Camping - Increase the number of 4-H youth, or parents of youth that report a positive change in responsibility and social development as a result of participation in a 4-H camp.
2	4-H Citizenship - Increase the number of 4-H youth participating as volunteers and through community service that demonstrate teamwork skills and community commitment.
3	4-H Animal Science - Increase the number of 4-H youth and adults participating in animal science programming that demonstrate increased knowledge of raising animals in a responsible, ethical, and economically viable manner.
4	4-H Communication and Expressive Arts - Increase the number of 4-H youth participating in communication and expressive arts programming that demonstrate increased self-efficacy in public speaking, presentations, visual arts, and performing arts.
5	4-H Foods, Nutrition and Health - Increase the number of 4-H youth participating in foods, nutrition, and health programs that demonstrate healthy living choices.
6	4-H Natural Resources and Environmental Education - Increase the number of 4-H youth participating in natural resources and environmental education programs that demonstrate environmentally responsible behavior.
7	4-H Plants, Soils and Entomology - Increase the number of 4-H youth participating in plant, soils, and entomology programming that learn the interconnectedness of organisms and their environment.
8	4-H Science, Engineering and Technology - Increase the number of 4-H youth that demonstrate sustained learning in science and technology programming.
9	4-H Careers and Consumer Education - Increase the number of 4-H youth that increase their awareness of potential career pathways through service learning programs and/or through the 4-H college fair.
10	4-H Careers and Consumer Education - Increase the number of 4-H youth that indicate increased knowledge/skills related to economic education and/or entrepreneurship.
11	4-H Leadership and Personal Development - Increase the number of 4-H youth that demonstrate leadership knowledge by participating in a leadership position on the club, county, state, or national level.
12	4-H Character Counts! - Increase the number of 4-H youth or parents of youth that indicate a positive change in behavior as a result of participating in 4-H Character Counts! programming.
13	4-H Adult Leaders - Increase the percent of adult 4-H volunteers participating in leadership and volunteer development trainings that indicate increased knowledge and skills in implementing 4-H programming as a result of participation.

Outcome # 1

1. Outcome Target

4-H Camping - Increase the number of 4-H youth, or parents of youth that report a positive change in responsibility and social development as a result of participation in a 4-H camp.

2. Outcome Type : Change in Action Outcome Measure

2011:300	**2012:**300	**2013:**400	**2014:**400	**2015:**500

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

4-H Citizenship - Increase the number of 4-H youth participating as volunteers and through community service that demonstrate teamwork skills and community commitment.

2. Outcome Type : Change in Action Outcome Measure

2011:400	**2012:**400	**2013:**450	**2014:**450	**2015:**500

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

4-H Animal Science - Increase the number of 4-H youth and adults participating in animal science programming that demonstrate increased knowledge of raising animals in a responsible, ethical, and economically viable manner.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:1300	**2012:**1300	**2013:**1600	**2014:**1600	**2015:**1900

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

4-H Communication and Expressive Arts - Increase the number of 4-H youth participating in communication and expressive arts programming that demonstrate increased self-efficacy in public speaking, presentations, visual arts, and performing arts.

2. Outcome Type : Change in Action Outcome Measure

2011:500	**2012:**500	**2013:**600	**2014:**600	**2015:**700

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

4-H Foods, Nutrition and Health - Increase the number of 4-H youth participating in foods, nutrition, and health programs that demonstrate healthy living choices.

2. Outcome Type : Change in Action Outcome Measure

2011:15000	**2012:**15000	**2013:**15000	**2014:**15000	**2015:**15000

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

4-H Natural Resources and Environmental Education - Increase the number of 4-H youth participating in natural resources and environmental education programs that demonstrate environmentally responsible behavior.

2. Outcome Type : Change in Action Outcome Measure

2011:5000	**2012:**5000	**2013:**6000	**2014:**6000	**2015:**7000

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 7

1. Outcome Target

4-H Plants, Soils and Entomology - Increase the number of 4-H youth participating in plant, soils, and entomology programming that learn the interconnectedness of organisms and their environment.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:4000	**2012:**4000	**2013:**5000	**2014:**5000	**2015:**6000

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 8

1. Outcome Target

4-H Science, Engineering and Technology - Increase the number of 4-H youth that demonstrate sustained learning in science and technology programming.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:35000	**2012:**35000	**2013:**36000	**2014:**36000	**2015:**37000

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 9

1. Outcome Target

4-H Careers and Consumer Education - Increase the number of 4-H youth that increase their awareness of potential career pathways through service learning programs and/or through the 4-H college fair.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:1200	**2012:**1200	**2013:**1300	**2014:**1300	**2015:**1400

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 10

1. Outcome Target

4-H Careers and Consumer Education - Increase the number of 4-H youth that indicate increased knowledge/skills related to economic education and/or entrepreneurship.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:700	**2012:**800	**2013:**800	**2014:**800	**2015:**900

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 11

1. Outcome Target

4-H Leadership and Personal Development - Increase the number of 4-H youth that demonstrate leadership knowledge by participating in a leadership position on the club, county, state, or national level.

2. Outcome Type : Change in Action Outcome Measure

2011:2200	**2012:**2200	**2013:**2400	**2014:**2400	**2015:**2600

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 12

1. Outcome Target

4-H Character Counts! - Increase the number of 4-H youth or parents of youth that indicate a positive change in behavior as a result of participating in 4-H Character Counts! programming.

2. Outcome Type : Change in Action Outcome Measure

2011:27000	**2012:**27000	**2013:**29000	**2014:**29000	**2015:**31000

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 13

1. Outcome Target

4-H Adult Leaders - Increase the percent of adult 4-H volunteers participating in leadership and volunteer development trainings that indicate increased knowledge and skills in implementing 4-H programming as a result of participation.

2. Outcome Type : Change in Knowledge Outcome Measure

2011:70	**2012:**70	**2013:**70	**2014:**70	**2015:**70

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

All items listed above directly affect agriculture, youth, communities, and all forms of businesses, i.e., droughts, floods, poor economy, and changes in government policy can lead to dramatic shifts in the structure of an industry, and hinder the ability of youth to participate in educational programming efforts. Budget cuts at the state and local levels and potentially related decreases in staffing may also impact the ability to offer as many programs/workshops.

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study

Description

Evaluation of a broad array of programs, such as 4-H require a multitude of varying procedures. In general, Extension educators are responsible for determining the evaluation procedure that best fits their program, time, and money resources.

2. Data Collection Methods

- Sampling
- Mail
- On-Site
- Structured
- Case Study
- Observation
- Portfolio Reviews
- Other (Electronic surveys & focus group)

Description

Pre and post test surveys of program participants, case studies of program participants, post only and retrospective post surveys will be conducted with program participants and the parents of some program participants. Focus groups will be conducted with program participants. Follow-up surveys will also be conducted with program participants.