2012 NY State Agricultural Experiment Station Research and Cornell University Research and Extension Combined Plan of Work

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I. Plan Overview

1. Brief Summary about Plan Of Work

Cornell University Applied Research and Extension
Plan of Work Overview

Global Food Security and Hunger

Research and extension education programs are directed toward improvement of the global food system as a whole from "farm to table" and include analyses of domestic and international policies affecting the system, food security and hunger. Programs help agricultural/horticultural businesses improve productivity and sustainability through resource management, adoption of new technologies and practices, improved marketing strategies and business management skills and by looking to alternative enterprises with emphasis on economic and environmentally sustainability. Emphases include enhancing soil resources and soil health, crop plant genomics, field evaluation of crops, reliable production guidelines, genetic improvement of animals and animal production, economics of production and farm management, integrated pest management, healthy produce, fruit and vegetable storage and facilitation of sustainable agriculture. Education complements research by encouraging farmers to grow new crop varieties and employ new production and business practices, through programs for ag sector businesses and by informing consumers about improved food products and encouraging adults to serve the foods to children. Research analyses and education also affect policies to reform governmental food-related programs. Elements of food insecurity addressed include availability of and access to food, sufficiency of food, social and cultural acceptability of food, and nutritional quality and safety of food.

Goals include:

- Boostingagricultural production in sustainable ways
- Improvingglobal capacity to meet growing food demand
- Fosteringinnovation in fighting hunger by addressing food insecurity in vulnerable populations
- Assuringthe long-term viability and well being of the agricultural/horticulture industry and rural communities in New York State.
- Promotingeconomically and environmentally sound products and practices, and safer and healthier products.
- Assistingproducers, horticulture businesses, and natural resource managers to optimize production management and improve profitability and sustainability in accordance with their goals.
- Increasing the use of sustainable practices results in improved or protected soil, air and water quality and production of high quality and safe food and fiber.
- Improving soil health and productivity, resulting in increased farm profitability and improved environmental quality.

Climate Change

Recent efforts have focused on identifying and quantifying the level of climatic disruption caused by

heat-trapping greenhouse gasses and the early, measurable impact on weather patterns, geographic bioregions, and living creatures. Now, researchers are exploring the looming challenges, investigating strategies to address expected impacts, and developing new resources to reduce the human "carbon footprint" adding to greenhouse gas emissions. Three vital areas have been identified for the well-being of future generations:

- Climate science: quantifying the current trend and predicting future impact
- Adaptation: moderating expected damage and identifying potential opportunities
- Mitigation: reducing the human "carbon" footprint to slow the pace of climate change

Examples of likely mitigation needs include controlling pests, applying fertilizer and optimal planting and harvesting times. Because carbon dioxide emissions are one of the major causes of global climate change, the study of carbon sequestration is a major research emphasis. Climate change also heightens the importance of research and extension on invasive species.

These stressors to human habitability will be borne disproportionately by the most vulnerable of human populations: the poor, the old and the young. Vulnerable populations will face adaptive challenges to their new environments, with potentially far-reaching implications for health as well as for societal strategies to cope with climate change effects at both the population and policy level. Technical knowledge of climate change issues and mitigation strategies is evolving rapidly and there is much confusion and skepticism and limited climate change literacy across audiences.

Goals include:

- Reducing factors contributing to climate change at the individual, community, industry, and institutional levels
- Developing an agriculture system that maintains high productivity in the face of climate changes
- Helping producers and communities adapt to chang-ing environments
- Sustaining economic vitality and taking advantage of emerging economic opportunities offered by climate change mitigation technologies

Sustainable Energy

Sustainable energy emphases include: Energy and Agriculture, Households and Energy, Consumers and Energy, Communities and Energy, Youth Development and Energy, and, Climate Change and Energy Literacy. The agriculture program includes development of biomass for bioenergy, design of optimum forestry and crops for bioenergy production, and production of value-added bio-based industrial products. The program also addresses energy conservation through agricultural applications of additional energy alternatives such as wood and grass pellet fuel production, recycling of vegetable oils as biodiesel, wind and solar energy production.

The consumer and community efforts emphasize increased energy efficiency and conservation, implications of energy subsidies and conservation incentives, understanding of how local policies and practices influence energy use and conservation, and workforce and business implications of sustainable development. The relationships of waste management and energy use and costs also are of concern.

Goals include:

- New York State will become a leader in pursuing the national goal of energy independence
- Enhanced economic well being through use of locally produced and owned energy sources and/or lower cost external sources retains energy dollars within the local and state
- Increasing sustainability of agricultural/horticulture/natural resource and supporting businesses and enhancing the financial security of individuals and families and local government operations through

reduced energy costs
- Improving the economic vitality of agricultural/natural resources and other businesses, enhancing the health of individuals and families, and increasing sustainability of local government operations through waste reduction and economical and safe management of waste.

Nutrition and Childhood Obesity

Childhood obesity prevention research and education are based upon an ecological approach focusing on individuals and their interaction among the multiple environments that surround them. This approach recognizes that there are inherent multiple levels of influence that affect a child's body weight. Faculty research topics include nutrition and hunger, nutrition education and behavior, built and community natural environments, promoting physical activity, healthful food availability, food product development and health care organization, services and policies.

Extension programs are designed to 1) connect research and practice, 2) result in behavior change, 3) build on the strengths of families and youth, 4) develop strong collaborations resulting in community changes for optimal health promotion and 5) provide policymakers with the knowledge to develop appropriate policies to promote healthy lifestyles. Extension programs target children, families and the community at large, are collaborative and work directly with key community organizations.

Goals include:

- Affordable, available nutritious foods
- Guidance for families to make science-based decisions about health and well-being
- Prevention of childhood overweight and reduction of long term risks for chronic disease by encouraging healthy eating and increased physical activity
- Improved community food security and healthful food-choice options

Food Safety

Food safety research and education programs serve a broad constituency including food producers, processors, distributors, retailers, commercial and institutional food service and retail establishments, consumers-both youth and adult, and research scientists. Emphases include these key food safety components: causes of microbiological contamination and microbiological resistance, education of consumers and food safety professionals, and developing food processing and storage technologies.

The program aims to reduce the incidence of food borne illness and provide a safe food supply. Technical support for policy makers and regulators, technical assistance and timely responses to emergent and continuing state and national outbreaks and issues are included. Consumer education programs focus on safe handling and preparation of foods, conveying important practices in preventing illness along with avoiding food cross-contamination.

Goals include:

- Provide for the nutritional well-being and safety of New York State residents through helping to assure a continuous, reasonably priced supply of wholesome foods.
- Improve food safety and food-handling practices throughout the food system.
- Reduce incidence of food-borne illnesses.

Youth, Family, and Community

Youth emphases span Positive Youth Development including Life Skill Development and Science,

Engineering and Technology. Family emphases include Human Development and Social Well Being, Economic Well Being, and Quality of Home and Work Environments. Community emphases include community and economic development, connecting people to the land and their environments, the agriculture/community interface, and youth community action.

Goals include:

Youth

- Enhancing youth development
- Preparing the next generation of scientists
- Youth lead healthy, satisfying, productive lives
- Youth become caring and contributing members of society enhancing the quality of life for themselves, their families, and their communities
- Youth become life-long learners
- Youth become knowledgeable, contributing participants in science and technology-related issues in their communities and chosen professions

Family

- Enabling vibrant and resilient communities
- Improved parenting practices that result in better child and youth outcomes
- Improved parent/care giving practices result in parents and caregivers reporting increased confidence in their roles
- Improved financial status of targeted NYS residents
- Improved indoor air quality in low income households resulting in better health outcomes

Community

- Better utilization of community resources to improve and sustain quality of life
- Increased local capacity for management and protection of local environmental resources
- Agriculture/horticulture/natural resource enterprises are viewed as contributing and positive elements in the community
- Communities actively manage their environments protecting and enhancing financial, infrastructure, human, environmental, and social capitals
- Youth are community leaders making decisions and taking action on issues of public/community concern that impact their lives
- Individuals and communities experience high quality of life, social cohesion, ecological integrity, effective decision making, and new economic opportunities
- Local economies become more diversified

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	1467.0	0.0	86.0	0.0
2013	1467.0	0.0	86.0	0.0

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

Year	Extension		Research	
	1862	1890	1862	1890
2014	1467.0	0.0	86.0	0.0
2015	1467.0	0.0	86.0	0.0
2016	1467.0	0.0	86.0	0.0

II. Merit Review Process

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

- ☐ Internal University Panel
- ☐ External University Panel
- ☐ External Non-University Panel
- ☐ Combined External and Internal University Panel
- ☑ Combined External and Internal University External Non-University Panel
- ☑ Expert Peer Review
- ☐ Other

2. Brief Explanation

We use one integrated process for merit review for applied research and extension projects, including integrated and multistate activities. Key elements of the process are described here followed by statistics from the 2010 proposal cycle.

Review Process (Research Projects and Extension Projects with Designated Funding)

1. Principal investigators are asked to consult program priorities (established as outlined in the stakeholder involvement section) and develop short pre-proposals for new or revised projects funded by Federal Formula Funds.
2. Pre-proposals are reviewed for purpose and relevancy by advisory Program Councils (see stakeholder involvement section) and other external stakeholders, the principal investigator's department chair, Extension Program Associate/Assistant Directors, and the Experiment Station directorates (Ithaca and Geneva). Reviews are submitted via a secure website.

For research proposals:

3. Pre-proposals are accepted/rejected; Principal Investigators develop accepted preproposals into full proposals.
4. The Department Chair recommends two or three peer reviewers to the Director's Office.

5. The Director's Office obtains the necessary reviews in accordance with CSREES rules using standard format.
6. Changes suggested by the peer reviewer are conveyed to the Principal Investigator. Peer reviewer names are not revealed to the Principal Investigator.
7. The revised proposal, with required CRIS forms, is submitted to the Director's Office.
8. The Director's Office submits the package to CSREES along with an attached statement certifying the peer review was completed.
9. Reviews are kept on file in the Director's Office.
10. The Director's Office attaches a statement to the proposal and sends this with the proposal and Form 10 to the CALS Research Office.
11. After approval by CSREES, funds are allocated to the appropriate research account.

For extension proposals:

3. Extension Program Directors rank/recommend extension preproposals.
4. Extension Program Directors meet with Experiment Station (Ithaca and Geneva) staff to discuss potential R-E linkages among extension preproposals.
5. Extension Program Directors finalize Smith-Lever funding recommendations and communicate decisions and needed modifications.

Cornell Review Criteria

1. Anticipated significance of results relative to current priority needs or opportunities
2. Scientific merit of objectives
3. Clarity of objectives
4. Appropriate methodology
5. Feasibility of attaining objectives
6. Accomplishment during preceding project (for revisions)
7. Research performance and competence of investigator(s)
8. Relevance of the proposed work to regional or national goals
9. Level of research-extension integration

For ongoing extension work not captured in current funded projects, we rely on our structure of Program Council and Program Work Teams for input and conduct regular program conferences with academic units to review program progress and direction.

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?

Our multistate, multi-institutional, and integrated activities occur within the same stakeholder involvement and program developments processes as other programs and, as such, are directed to priority needs of priority audiences. Our program development structure for federal formula funds is integrated by definition (see stakeholder involvement and merit review processes). Background information on our program development structure and process is available at: http://cce.cornell.edu/learnAbout/pcs-pwts/Pages/ProgramCouncilsandTeams.aspx

2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?

In contrast to many other states, the great majority of our integrated and multistate expenditures are in the form of funded projects; only the minor proportion is allocated for FTE support. Because they are incorporated in our ongoing program development structures and

processes, integrated and multistate projects abide by and benefit from the stakeholder involvement and audience outreach processes outlined in the following section of this plan. We expect all projects to be grounded in relevant needs as articulated through our extensive stakeholder involvement structures and use a wide variety of methods to reach out to under-served and under-represented audiences (again, see stakeholder involvement section). The specific audiences and needs addressed are determined on a project-by-project basis as well as within the broader umbrella of priorities established through our advisory structures.

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

All projects are expected to outline expected outcomes and impacts and report against them. We require a "statement of relevancy," specific identification of intended outcomes, and descriptions of multistate and integrated activities in our project pre-proposal process and in final project descriptions. Ability to outline relevancy and specific intended outcomes is a primary determinant of funding decisions. Project leaders report against these outcomes and activities annually and upon project completion.

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

The fundamental purposes of these efforts are to strengthen quality of programming by bringing together required disciplines and to ensure efficient use and maximum leveraging of federal formula funds across institutions. For more than 15 years, we have progressively integrated planning and accountability processes for federal formula fund allocation for research and extension, providing greater focus on priority needs and greater efficiencies in program development.

Decision criteria for Regional Research funds illustrate the intent of greater effectiveness and efficiency. Regional funds are allocated by the Directors of CUAES and NYSAES among the various eligible projects based on the national research priorities plus the following criteria as specified in the USDA CSREES Manual for Cooperative Regional Research:

- The problem involves evident cooperation and interdependence of disciplinary skills and insights, and their application to its solution.
- Research on the problem requires more scientists, equipment, and facilities than are generally available at one experiment station.
- The research approach is adaptable and particularly suitable for interstate and federal-state cooperation, resulting in better use of limited resources and a saving of research funds.
- The project attracts additional support for research on the problem that is not likely to occur through other research programs and mechanisms.
- The project is sufficiently specific to promise significant accomplishment in a reasonable period of time (five years or less).
- The project can provide the solution to a problem of fundamental importance or fill an important gap in our knowledge from the standpoint of the present and future agriculture of the region.
- The project can be effectively organized and conducted on a regional level.

The intent for multistate extension and integrated activities is parallel - greater program effectiveness by drawing on the broader expertise base of the land grant system and greater efficiency by eliminating parallel development of curricular resources and/or isolated research efforts. For some projects, efficiency and effectiveness are primary design criteria, such as for the eXtension effort or support for regional community development efforts. In others, those benefits accrue as a secondarily to effective integration and collaboration in program development.

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 traditional stakeholder individuals
- ☑ Targeted invitation to non-traditional stakeholder individuals
- ☑ Targeted invitation to selected individuals from general public
- ☑ Survey of traditional stakeholder groups
- ☑ Survey of traditional stakeholder individuals
- ☑ Survey of the general public
- ☑ Survey specifically with non-traditional groups
- ☑ Survey specifically with non-traditional individuals
- ☑ Survey of selected individuals from the general public
- ☐ Other

Brief explanation.

Gaining stakeholder input and encouraging stakeholder participation is a system-wide expectation of all levels and units. Across the system, all of the stakeholder participation methods listed are employed, no single unit uses them all.

At the state level, we combined five separate statewide program councils into a single multidisciplinary council during 2010. Membership is intentionally monitored and updated to ensure involvement and ties to traditional and non-traditional constituents and established and emerging partnerships. The council provides guidance for CCE, CUAES and NYSAES by setting broad priorities for applied research and extension programming.

In addition, we have 26 active Program Work Teams comprised of extension educators, faculty, and stakeholders who work together to develop, implement and evaluate priority programs. A new team was added in FY10 focused on climate change. More than350 individuals were involved in the work of these teams in 2010. Since 2001, forty-one (47) program work teams have been authorized and supported to develop and deliver integrated applied research and extension programming across the state. The fact that more than 20 have completed their work and "decommissioned" indicates they are serving as intended, as a flexible program development mechanism responsive to needs. PWTs are expected to nurture research-extension integration, to encourage campus-field interactions and collaborations, to take multi-disciplinary approaches, to evaluate their efforts, and to involve their external members in all aspects of their work.

Beyond this state-level program development and stakeholder input structure/process, each of Cornell Cooperative Extension's 55 county extension associations continued to work closely with stakeholders in their counties via participation in their local governance structures, i.e. board of directors, and program guidance structures, i.e., advisory committee structures. Formal advisory committees are also used to guide New York City Extension programs. In 2010, more than 40,000 stakeholder volunteers from all walks of life participated and assisted in the direction, priority setting, and delivery of extension programs throughout the state.

By definition, "under-represented or under-served" groups require that additional outreach and engagement steps be taken. One of the most effective strategies for gaining input and developing working relationships is by networking and partnering with organizations that do have credible relationships with target groups. Our local boards of directors and advisory committees include at least 300 such representatives statewide. On both the program councils and program work teams, we target representatives of organizations working effectively with groups with whom we should strengthen ties.

Effective involvement of youth in program determination and implementation is of particular concern. Our local advisory committees are expected to include youth members as part of the needs assessment and decision making structure. In 2010, more than 3000 youth served in governance and program delivery roles statewide.

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 Internal Focus Groups
- ☑ Use External Focus Groups
- ☑ Open Listening Sessions
- ☑ Needs Assessments
- ☑ Use Surveys
- ☐ Other

Brief explanation.

Across all levels of the system, all of the techniques listed were used; the mix of methods varied from site to site and program to program. All of our units are required to have active and diverse advisory processes and to intentionally consider audiences not currently served. Activities of our state level councils and work teams re described in other questions in this section. Needs assessments, focus groups, and use surveys are conducted at the level of individual program units as well as in our statewide plan of work process.

Extension educators are expected to submit narrative reports of efforts to engage underserved populations. For the 2010 reporting year, more than 60 such stories were submitted representing all five of our broad program areas.

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
- ☑ Meeting specifically with non-traditional groups
- ☑ Survey specifically with non-traditional groups
- ☑ Meeting specifically with non-traditional individuals
- ☑ Survey specifically with non-traditional individuals
- ☑ Meeting with invited selected individuals from the general public
- ☑ Survey of selected individuals from the general public
- ☐ Other

Brief explanation.

All of the techniques listed are used but methods vary site to site and program to program across the system. Structures and processes for aggregating data are described in other questions in this section. The most active data gathering occurs in three venues - local advisory bodies, the program work teams, and program councils. Example outreach mechanisms include dramatic increase in use of Internet based instruction and forums at the community level directed to economic sustainability, particularly of rural communities. We continue statewide efforts begun in 2008 to provide current resources for educators regarding equal program opportunity and have done extensive participant mapping to identify opportunities to increase inclusiveness of our programs. Our Civil Rights compliance review in late 2009 provided additional guidance for connecting with diverse audiences.

3. A statement of how the input will be considered

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

Brief explanation.

The stakeholder input process for statewide program development jointly utilized by Cornell Cooperative Extension (CCE), the Cornell University Agricultural Experiment Station (CUAES), and the New York State Agricultural Experiment Station (NYSAES) was established in February 2001. The process informs federal formula funding priorities and provides project specific input on relevance and value of proposed work. In other words, our program council and program work teams work to improve program focus, relevance, and planning activities. Members of our program councils have direct input on decisions regarding funding of current extension and research projects contributing ratings of perceived relevance. Each year, we compare funding decisions with advisory input and can confidently conclude that stakeholders are having a

powerful voice in the direction of our programs. Our program council also advises the directors of CCE and CUAES on annual statewide program priorities, review Program Work Team performance and identify "gaps" in programmatic coverage. Our statewide applied research and extension priorities are updated annually, communicated to faculty and staff, and used as a primary criterion in funding decisions.

For example, for the FY10 funding year, 117 preproposals were received for research, extension, or integrated projects and 90 were funded. Traditionally, 85-90% of the pre-proposals highly rated by stakeholder- reviewers have been funded. The majority of the preproposals receiving lower ratings were not funded. Regular communications with Program Council members, especially focused on off-campus and external members, have been used each year to keep these stakeholders abreast of the decision-making process, and notified about the projects that were funded. In June 2010, all Program Council Members, representing each of the five program areas, had an opportunity to participate in an in-depth webinar focused on emerging issues and discussions about sustainable energy and climate change research and extension priorities.

Perhaps even more important is the influence of stakeholder input in determining local programming. Our county extension associations and multi-county programs are semi-autonomous, much more so than in many states. The program of work of each unit is established under guidance of stakeholders in local advisory structures and governing boards and through environmental scanning activities conducted as part of our plan of work process. Such input has immediate and specific influence on program direction and strategy.

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Global Food Security and Hunger
2	Climate Change
3	Sustainable Energy
4	Childhood Obesity -- Nutrition and Childhood Obesity
5	Food Safety
6	Youth, Family, and Community

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Global Food Security and Hunger

2. Brief summary about Planned Program

Our research and education is directed toward improvement of the global food system as a whole from "farm to table" and including analyses of domestic and international policies affecting the system, food security and hunger. Extension and research programs fit within the University's priority of global health, defined as research, service, and training that address health problems that transcend national boundaries, that disproportionately affect the resource-poor, and that are best addressed through multidisciplinary solutions. Domestic programs enhance and may directly contribute to work internationally and particularly in developing countries. Programs cover multiple aspects of global food security such as soil resources and soil health, crop plant genomics, field evaluation of crops, reliable production guidelines, genetic improvement of animals and animal production, economics of production and farm management, integrated pest management, healthy produce, fruit and vegetable storage and facilitation of sustainable agriculture. Education complements research by encouraging farmers to grow new crop varieties and employ new production and business practices, through programs for ag sector businesses and by informing consumers about improved food products and encouraging adults to serve the foods to children. Research analyses and education also affect policies to reform governmental food-related programs. CCE programs in the US address one or more of the aspects of food insecurity: availability of and access to food, certainty of availability and access to food, sufficiency of food, social and cultural acceptability of food, and nutritional quality and safety of food.

Agriculture, horticulture, and related business vitality work is critical to the land grant mission. Cornell University has a commitment to farm and agricultural/horticultural business industries and to assist key decision makers in making the best choices in managing their farms or agriculturally related businesses. Research and educational programs help business owners improve productivity and sustainability through resource management, adoption of new technologies and practices, improved marketing strategies and business management skills and by looking to alternative enterprises. Farmers and horticulturalists utilize research-based knowledge to continue producing a stable, safe and affordable food supply and horticultural products in economically and environmentally sustainable ways.

Cornell University has a commitment to agriculture, horticulture, and natural resources enterprises and to assisting them in making the best choices when selecting production principles and practices to enhance economic and environmental sustainability. We provide comprehensive research and education programming focused on assessing existing and new production-management practices and techniques with special emphasis on agricultural environmental management. As part of our strategy, we emphasize integration of research and extension to accelerate: identification of problems, focusing scientific effort to resolving problems, field-testing and evaluation of technology and cultural practices, and implementation of environmentally superior innovations/practices for the agricultural, horticultural, and natural resource communities.

3. Program existence :

- ○ New (One year or less)
- ○ Intermediate (One to five years)
- ◉ Mature (More than five years)

4. Program duration :

- ○ Short-Term(One year or less)
- ○ Medium-Term (One to five years)
- ◉ Long-Term (More than five years)

5. Expending formula funds or state-matching funds :

- ◉ Yes
- ○ No

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

- ◉ Yes
- ○ 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
101	Appraisal of Soil Resources	5%		4%	
102	Soil, Plant, Water, Nutrient Relationships	5%		9%	
202	Plant Genetic Resources	1%		15%	
204	Plant Product Quality and Utility (Preharvest)	5%		5%	
205	Plant Management Systems	15%		4%	
211	Insects, Mites, and Other Arthropods Affecting Plants	2%		7%	
212	Pathogens and Nematodes Affecting Plants	2%		14%	
213	Weeds Affecting Plants	2%		3%	
215	Biological Control of Pests Affecting Plants	3%		3%	
216	Integrated Pest Management Systems	2%		3%	
301	Reproductive Performance of Animals	1%		5%	
302	Nutrient Utilization in Animals	6%		4%	
305	Animal Physiological Processes	2%		4%	
307	Animal Management Systems	16%		2%	
311	Animal Diseases	2%		9%	
312	External Parasites and Pests of Animals	1%		1%	
601	Economics of Agricultural Production and Farm Management	8%		3%	
602	Business Management, Finance, and Taxation	12%		2%	
604	Marketing and Distribution Practices	5%		1%	
704	Nutrition and Hunger in the Population	5%		2%	
	Total	100%		100%	

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

1. Situation and priorities

Agricultural and food industries contribute an estimated $30 billion a year to New York State's economy. Improving production efficiency, quality and safety of plants and animals in agricultural, horticultural, and natural resource production systems is fundamental to improving our ability to compete in

a global economy. Managers of New York's 36,000 farms and horticultural producers, and 3,000 natural resource producers face dynamic and complex production environments. Extensive knowledge and skills are needed for identifying, selecting, and adopting principles and practices that optimize production management and improve profitability and sustainability in accordance with business goals. Technologies such as genetic engineering, satellite imagery and GIS, computer aided management decision tools and the like were in exploratory phases a decade or less ago but are readily available today for adoption and use. Technical assistance providers have similar needs to remain up-to-date and able to provide appropriate recommendations for each enterprise.

Protecting and improving the integrity of our environment and maintaining ecological systems enable human prosperity. Expanding human populations cause growing consumer demands on the agriculture and food system. This magnifies challenges of balancing food production and processing with land stewardship and protection of the environment. The long-term sustainability of agriculture is inexorably linked to environmental quality.

Food insecurity, as defined by the USDA, refers to sustained access at all times, in socially acceptable ways, to food adequate in quantity and quality to maintain a healthy life. Hunger is the uneasy or painful sensation caused by a lack of food, and is a potential although not necessary, consequence of food insecurity. Between 800 million to 1 billion people world-wide lack enough food to meet their daily energy requirements. In 2008, 21 percent of U.S. households with children (8.3million households) were food insecure, up from 16 percent in 2006 and 2007. This figure was the highest recorded since the Federal Government began monitoring household food security in 1995. Having enough calories is not sufficient to assure nutritional adequacy. Foods available may not provide essential nutrients for health. Called "hidden hunger," this type of malnutrition affects more than 3 billion people in developing countries. In developed countries, the problem of overweight may be characterized by high caloric consumption but inadequate levels of important nutrients.

Program priorities include: soil resources, crop plant genomics, field evaluation of crops, reliable production guidelines, genetic improvement of animals and animal production, economics of production and farm management, integrated pest management, healthy produce, fruit and vegetable storage, facilitation of sustainable agriculture and analyses of food system policies. Education promotes new crop varieties and employment of new production and business practices, supports a viable agriculture business sector in the economy and informs consumers about improved food products and how to improve their food security.

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

- New science is needed for the production and procurement of adequate and acceptable nourishment for the world's population.
- Tackling the issues of global food security and hunger requires multidisciplinary, multi-institutional and collaborative research and extension efforts.

• Addressing hunger involves not only providing adequate calories but also meeting total human nutrition needs.

• Research and education must encompass a broad spectrum of food system topics from the study of basic plant and animal genomes, to effective and efficient production, to marketing, distribution and consumption practices, to policies affecting the quality and availability of a secure food supply.

• Producers, horticultural business people, and natural resource managers often are not fully aware of or skillful in managing production principles and practices that may help optimize their operations for economic and environmental sustainability and/or business management and development needs.

• Many agricultural/horticultural/natural resources businesses have opportunity to strengthen profitability through improved planning and management.

• There is opportunity for growth in the agricultural/horticultural/natural resources sectors through alternative, new, and value added enterprises which may not be apparent to existing business people or potential investors.

• The supply and effective management of labor resources is a key to the viability of agricultural/horticultural/natural resources enterprises.

• Producers, horticultural business people, and natural resource managers often are not fully aware of potential environmental impacts of their operations and/or requirements and opportunities of environmental regulations and programs.

• Technical assistance providers relied upon by producers, horticultural business people, and natural resource managers have parallel needs for current information on appropriate production practices.

• In most cases, it is possible to simultaneously meet economic and environmental sustainability goals.

• Integrated systems approaches are needed to expand our understanding of trade-offs and develop BMPs that better address current and future challenges as well as food safety.

2. Ultimate goal(s) of this Program

• Boost US agricultural production.

• Improve global capacity to meet growing food demand.

• Foster innovation in fighting hunger by addressing food insecurity in vulnerable populations

• Assure the long-term viability and well being of the agricultural/horticulture industry and rural communities in New York State.

• Promote economically and environmentally sound products and practices, and safer and healthier products.

• Assist producers, horticulture businesses, and natural resource managers optimize production management and improve profitability and sustainability in accordance with their goals.

• Increasing the use of sustainable practices results in improved or protected soil, air and water quality and production of high quality and safe food and fiber.

• Improve soil health and productivity, resulting in increased farm profitability and improved environmental quality.

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
2012	290.0	0.0	50.0	0.0
2013	290.0	0.0	50.0	0.0

Year	Extension		Research	
	1862	1890	1862	1890
2014	290.0	0.0	50.0	0.0
2015	290.0	0.0	50.0	0.0
2016	290.0	0.0	50.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

This is a comprehensive program entailing a wide range of applied research activities and multiple education methods depending on context and need. Campus-based faculty and extension associates, regional specialists and county-based educators all are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

Multi-disciplinary, multi-institutional and collaborative program examples include: Collaborative Crops Research Program (CCRP), Cornell-Eastern Europe-Mexico International Collaborative Project in Potato Late Blight Control (CEEM), Cornell International Institute for Food, Agriculture and Development (CIIFAD), Institute for Genomic Diversity (IGD), Institute for Global Learning, International Integrated Pest Management, International Programs Initiative for Biotechnology, International Research and Scientific Exchanges, Program in International Nutrition, Strategic World Initiative for Technology Transfer (SWIFTT), and The Essential Electronic Agricultural Library (TEEAL).

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	☐ Billboards
☑ Group Discussion	☑ Newsletters
☑ One-on-One Intervention	☑ TV Media Programs
☑ Demonstrations	☑ Web sites
☐ Other 1	☑ Other 1 (On-line instruction)
☐ Other 2	☐ Other 2

3. Description of targeted audience

Key audiences served, directly and indirectly, in enhancing agricultural and horticultural business viability include: established producers; new and young producers, consultants and service providers, input suppliers, cooperative directors and managers, marketing firms, governmental agencies, lenders, and local/state/federal governmental leaders.

Food security and hunger programming addresses individuals and families, caregivers, nutritionists, community leaders, human service providers and food policy makers at the local, state, and national levels.

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2012	150000	725000	10000	175000
2013	150000	725000	10000	175000
2014	150000	725000	10000	175000
2015	150000	725000	10000	175000
2016	150000	725000	10000	175000

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

2012:10 **2013:**10 **2014:**10 **2015:**10 **2016:**10

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2012	310	300	610
2013	310	300	610
2014	310	300	610
2015	310	300	610
2016	310	300	610

V(H). State Defined Outputs

1. Output Target

- (1.1a) # producers/horticulture/natural resources business persons completing education programs on business management, finance, business planning and marketing, human resource management, risk management, production economics, and business transitions.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (1.2a) # producers/horticulture business persons completing programs to expand profitability, develop marketing options, diversify or substitute alternative products or enterprises, and/or increase operational efficiencies.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (1.3a) # producers, horticulture business persons, and/or natural resource managers completing education programs on existing and new production-management practices and techniques.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (1.4a) # of children, youth, and adults completing education programs on: identifying food insecurity, how to obtain food assistance, how to balancing available resources by planning food choices, and improve the sufficiency and quality of the diet.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (1.4b) # of policy makers and citizens participating in education programs on status of food security in their communities and possible actions to promote increased food security.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

V(I). State Defined Outcome

O. No	Outcome Name
1	(1.1b) # participants demonstrating knowledge or skill gains in business management, finance, business planning and marketing, human resource management, risk management, production economics, inter-generational transfer and other business transitions.
2	(1.1c) # participants documented to have applied knowledge or skills gained to strengthen existing business operations.
3	(1.1d) # participating family-owned agricultural/horticultural/natural resources businesses that plan for succession, transfer, or sale of their business.
4	(1.1e) # participants reporting improved agricultural/ horticultural business profitability attributed at least in part to program participation.
5	(1.1f) # business owners successfully completing an intergenerational transfer or other desired dispensation of their business attributed at least in part to program participation.
6	(1.2b) # participants demonstrating knowledge or skill gains related to expanding profitability, developing marketing options, diversifing or substituting alternative products or enterprises, and/or increasing operational efficiencies to solve immediate concerns.
7	(1.2c) # participants documented to have initiated one or more alternative or expanded ventures.
8	(1.2d) # participants or producer groups who adopt practices of value-added production through retaining control of their product further in the processing chain, starting their own value added business, or forming alliances.
9	(1.2e) # of new food, horticultural, and agricultural businesses and/or new enterprises within existing businesses reported by program participants and attributed at least in part to program participation.
10	(1.3b) # of producers, horticulture business persons, and/or natural resource managers demonstrating knowledge/skill gains in existing/new practices and techniques; improved product handling and storage to maintain quality and food safety; and/or improving production efficiency through adoption of best management practices.
11	(1.3c) # of producers, horticulture business persons, and/or natural resource managers modifying existing practices and/or adopted new production management practices to address current issues and improve yield efficiency, consistency and/or quality.
12	(1.3d) # of producers, horticulture business persons, and/or natural resource managers who report improved ability to anticipate and respond to environmental and market variations through alternative production management strategies.
13	(1.3e) # technical assistance providers documented to have incorporated current best management practices in their recommendations.
14	(1.3f) # of producers, horticulture business persons, and/or natural resource managers documented to have improved economic returns to agricultural business profitability and vitality resulting from enhanced production management practices.
15	(1.4c) # of program participants who demonstrate knowledge or skill gains related to status of food security in their communities and possible actions to promote increased food security.
16	(1.4d) # of program participants who know what to do related to food insecurity problems such as how to obtain food assistance, how to balance available resources by planning food choices, and how to improve the sufficiency and quality of the diet.
17	(1.4e) # of program participants who have acted to improve their food security status.
18	(1.4f) # of participating communities that assess food insecurity and develop appropriate action plans.
19	(1.4g) # of individuals or households documented to have improved food security status.
20	(1.4h) # of participating communities reporting declines in food insecurity indicators.

Outcome # 1

1. Outcome Target

(1.1b) # participants demonstrating knowledge or skill gains in business management, finance, business planning and marketing, human resource management, risk management, production economics, inter-generational transfer and other business transitions.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☑ 601 - Economics of Agricultural Production and Farm Management
- ☑ 602 - Business Management, Finance, and Taxation
- ☑ 604 - Marketing and Distribution Practices
- ☐ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 2

1. Outcome Target

(1.1c) # participants documented to have applied knowledge or skills gained to strengthen existing business operations.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:3500 **2013:**3500 **2014:**3500 **2015:**3500 **2016:**3500

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☑ 601 - Economics of Agricultural Production and Farm Management
- ☑ 602 - Business Management, Finance, and Taxation
- ☑ 604 - Marketing and Distribution Practices
- ☐ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 3

1. Outcome Target

(1.1d) # participating family-owned agricultural/horticultural/natural resources businesses that plan for succession, transfer, or sale of their business.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:75 **2013:**75 **2014:**75 **2015:**75 **2016:**75

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☑ 601 - Economics of Agricultural Production and Farm Management
- ☑ 602 - Business Management, Finance, and Taxation
- ☑ 604 - Marketing and Distribution Practices
- ☐ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 4

1. Outcome Target

(1.1e) # participants reporting improved agricultural/ horticultural business profitability attributed at least in part to program participation.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:2500 **2013:**2500 **2014:**2500 **2015:**2500 **2016:**2500

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☑ 601 - Economics of Agricultural Production and Farm Management
- ☑ 602 - Business Management, Finance, and Taxation
- ☑ 604 - Marketing and Distribution Practices
- ☐ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 5

1. Outcome Target

(1.1f) # business owners successfully completing an intergenerational transfer or other desired dispensation of their business attributed at least in part to program participation.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:50 **2013:**50 **2014:**50 **2015:**50 **2016:**50

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☑ 601 - Economics of Agricultural Production and Farm Management
- ☑ 602 - Business Management, Finance, and Taxation
- ☑ 604 - Marketing and Distribution Practices
- ☐ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 6

1. Outcome Target

(1.2b) # participants demonstrating knowledge or skill gains related to expanding profitability, developing marketing options, diversifing or substituting alternative products or enterprises, and/or increasing operational efficiencies to solve immediate concerns.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☑ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☑ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☑ 601 - Economics of Agricultural Production and Farm Management
- ☑ 602 - Business Management, Finance, and Taxation
- ☑ 604 - Marketing and Distribution Practices
- ☐ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 7

1. Outcome Target

(1.2c) # participants documented to have initiated one or more alternative or expanded ventures.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:200 **2013:**200 **2014:**200 **2015:**200 **2016:**200

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☑ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☑ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☑ 601 - Economics of Agricultural Production and Farm Management
- ☑ 602 - Business Management, Finance, and Taxation
- ☑ 604 - Marketing and Distribution Practices
- ☐ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 8

1. Outcome Target

(1.2d) # participants or producer groups who adopt practices of value-added production through retaining control of their product further in the processing chain, starting their own value added business, or forming alliances.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:150 **2013:**150 **2014:**150 **2015:**150 **2016:**150

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☑ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☑ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☑ 601 - Economics of Agricultural Production and Farm Management
- ☑ 602 - Business Management, Finance, and Taxation
- ☑ 604 - Marketing and Distribution Practices
- ☐ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 9

1. Outcome Target

(1.2e) # of new food, horticultural, and agricultural businesses and/or new enterprises within existing businesses reported by program participants and attributed at least in part to program participation.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:250 **2013:**250 **2014:**250 **2015:**250 **2016:**250

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☑ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☑ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☑ 601 - Economics of Agricultural Production and Farm Management
- ☑ 602 - Business Management, Finance, and Taxation
- ☑ 604 - Marketing and Distribution Practices
- ☐ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 10

1. Outcome Target

(1.3b) # of producers, horticulture business persons, and/or natural resource managers demonstrating knowledge/skill gains in existing/new practices and techniques; improved product handling and storage to maintain quality and food safety; and/or improving production efficiency through adoption of best management practices.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 101 - Appraisal of Soil Resources
- ☑ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☑ 204 - Plant Product Quality and Utility (Preharvest)
- ☑ 205 - Plant Management Systems
- ☑ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☑ 212 - Pathogens and Nematodes Affecting Plants
- ☑ 213 - Weeds Affecting Plants
- ☑ 215 - Biological Control of Pests Affecting Plants
- ☑ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☑ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☑ 307 - Animal Management Systems
- ☑ 311 - Animal Diseases
- ☑ 312 - External Parasites and Pests of Animals
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☐ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices
- ☐ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 11

1. Outcome Target

(1.3c) # of producers, horticulture business persons, and/or natural resource managers modifying existing practices and/or adopted new production management practices to address current issues and improve yield efficiency, consistency and/or quality.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:2500 **2013:**2500 **2014:**2500 **2015:**2500 **2016:**2500

3. Associated Knowledge Area(s)

- ☑ 101 - Appraisal of Soil Resources
- ☑ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☑ 204 - Plant Product Quality and Utility (Preharvest)
- ☑ 205 - Plant Management Systems
- ☑ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☑ 212 - Pathogens and Nematodes Affecting Plants
- ☑ 213 - Weeds Affecting Plants
- ☑ 215 - Biological Control of Pests Affecting Plants
- ☑ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☑ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☑ 307 - Animal Management Systems
- ☑ 311 - Animal Diseases
- ☑ 312 - External Parasites and Pests of Animals
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☐ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices
- ☐ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 12

1. Outcome Target

(1.3d) # of producers, horticulture business persons, and/or natural resource managers who report improved ability to anticipate and respond to environmental and market variations through alternative production management strategies.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:2000 **2013:**2000 **2014:**2000 **2015:**2000 **2016:**2000

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☑ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☑ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☑ 601 - Economics of Agricultural Production and Farm Management
- ☑ 602 - Business Management, Finance, and Taxation
- ☑ 604 - Marketing and Distribution Practices
- ☐ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 13

1. Outcome Target

(1.3e) # technical assistance providers documented to have incorporated current best management practices in their recommendations.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:1500 **2013:**1500 **2014:**1500 **2015:**1500 **2016:**1500

3. Associated Knowledge Area(s)

- ☑ 101 - Appraisal of Soil Resources
- ☑ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☑ 204 - Plant Product Quality and Utility (Preharvest)
- ☑ 205 - Plant Management Systems
- ☑ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☑ 212 - Pathogens and Nematodes Affecting Plants
- ☑ 213 - Weeds Affecting Plants
- ☑ 215 - Biological Control of Pests Affecting Plants
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- ☐ 301 - Reproductive Performance of Animals
- ☑ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☑ 307 - Animal Management Systems
- ☑ 311 - Animal Diseases
- ☑ 312 - External Parasites and Pests of Animals
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☐ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices
- ☐ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 14

1. Outcome Target

(1.3f) # of producers, horticulture business persons, and/or natural resource managers documented to have improved economic returns to agricultural business profitability and vitality resulting from enhanced production management practices.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:1000 **2013:**1000 **2014:**1000 **2015:**1000 **2016:**1000

3. Associated Knowledge Area(s)

- ☑ 101 - Appraisal of Soil Resources
- ☑ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☑ 204 - Plant Product Quality and Utility (Preharvest)
- ☑ 205 - Plant Management Systems
- ☑ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☑ 212 - Pathogens and Nematodes Affecting Plants
- ☑ 213 - Weeds Affecting Plants
- ☑ 215 - Biological Control of Pests Affecting Plants
- ☑ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☑ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☑ 307 - Animal Management Systems
- ☑ 311 - Animal Diseases
- ☑ 312 - External Parasites and Pests of Animals
- ☑ 601 - Economics of Agricultural Production and Farm Management
- ☑ 602 - Business Management, Finance, and Taxation
- ☑ 604 - Marketing and Distribution Practices
- ☐ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 15

1. Outcome Target

(1.4c) # of program participants who demonstrate knowledge or skill gains related to status of food security in their communities and possible actions to promote increased food security.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☐ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices
- ☑ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 16

1. Outcome Target

(1.4d) # of program participants who know what to do related to food insecurity problems such as how to obtain food assistance, how to balance available resources by planning food choices, and how to improve the sufficiency and quality of the diet.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☐ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices
- ☑ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 17

1. Outcome Target

(1.4e) # of program participants who have acted to improve their food security status.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:10000 **2013:**10000 **2014:**10000 **2015:**10000 **2016:**10000

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☐ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices
- ☑ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 18

1. Outcome Target

(1.4f) # of participating communities that assess food insecurity and develop appropriate action plans.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:75 **2013:**75 **2014:**75 **2015:**75 **2016:**75

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☐ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices
- ☑ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 19

1. Outcome Target

(1.4g) # of individuals or households documented to have improved food security status.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:7500 **2013:**7500 **2014:**7500 **2015:**7500 **2016:**7500

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☐ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices
- ☑ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 20

1. Outcome Target

(1.4h) # of participating communities reporting declines in food insecurity indicators.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 202 - Plant Genetic Resources
- ☐ 204 - Plant Product Quality and Utility (Preharvest)
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 301 - Reproductive Performance of Animals
- ☐ 302 - Nutrient Utilization in Animals
- ☐ 305 - Animal Physiological Processes
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 312 - External Parasites and Pests of Animals
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☐ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices
- ☑ 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 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.)
- ☐ Other

Description

Agricultural/horticultural/natural resources enterprises operate in a complex and volatile context involving susceptibility to weather extremes, changing governmental policies and regulations, competitive land uses and shifting development patterns, evolving consumer demands, and globally influenced markets. Fundamental change is occurring in the state and regional economies within which agricultural/horticultural/natural resources enterprises operate. The specific implications of these external factors vary greatly by locale and across commodities and business forms. Population and land use changes in farming communities can lead to producer/neighbor issues that influence choice of production practices. Economic stress exacerbates issues of food insecurity and hunger and many community organizations are over burdened and unable to meet demands.

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

Description

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation "system" rather than as bounded "studies" or investigations. Because each of the plans addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed,

sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

2. Data Collection Methods

- ☑ Sampling
- ☑ Whole population

Survey (Mail, Telephone, On-Site).

- ☑ Mail
- ☑ Telephone
- ☑ On-Site

Interview

- ☑ Structured
- ☑ Unstructured

- ☑ Case Study
- ☑ Observation
- ☐ Portfolio Reviews
- ☑ Tests
- ☑ Journals
- ☐ Other

Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected "success stories."

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Climate Change

2. Brief summary about Planned Program

In the past decade, Cornell researchers have focused on identifying and quantifying the level of climatic disruption caused by heat-trapping greenhouse gasses and the early, measurable impact on weather patterns, geographic bioregions, and living creatures. Now, researchers are exploring the looming challenges, investigating strategies to address expected impacts, and developing new resources to reduce the human "carbon footprint" adding to greenhouse gas emissions. Multidisciplinary researchers, educators, and extension faculty- from plant biologists to economists to climatologists- are engaged in three vital areas of exploration for the well-being of future generations:

- Climate science: quantifying the current trend and predicting future impact
- Adaptation: moderating expected damage and identifying potential opportunities
- Mitigation: reducing the human "carbon" footprint to slow the pace of climate change

3. Program existence :

- ○ New (One year or less)
- ◉ Intermediate (One to five years)
- ○ Mature (More than five years)

4. Program duration :

- ○ Short-Term(One year or less)
- ○ Medium-Term (One to five years)
- ◉ Long-Term (More than five years)

5. Expending formula funds or state-matching funds :

- ◉ Yes
- ○ No

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

- ◉ Yes
- ○ 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
104	Protect Soil from Harmful Effects of Natural Elements	7%		1%	
111	Conservation and Efficient Use of Water	15%		1%	
112	Watershed Protection and Management	17%		18%	
125	Agroforestry	5%		3%	
132	Weather and Climate	14%		8%	
133	Pollution Prevention and Mitigation	10%		24%	
135	Aquatic and Terrestrial Wildlife	8%		13%	
136	Conservation of Biological Diversity	15%		17%	
141	Air Resource Protection and Management	2%		2%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	2%		13%	
405	Drainage and Irrigation Systems and Facilities	5%		0%	
	Total	100%		100%	

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

1. Situation and priorities

Climate data for the last 50 years show dramatic changes in temperature and precipitation at the global, national, regional, and state levels. In New York and elsewhere, global climate change is believed responsible for more erratic weather patterns, warmer temperatures, heavier rainfall, lower snow levels, and altered season length with intensifying impact on humans, wildlife, the economy, and the environment. Without action to reduce heat-trapping emissions today, scientists predict that summer in New York will feel like summer in South Carolina by the end of this century.

Cornell researchers have been at the forefront in documenting climate change and its impact in the living world. New York farmers rely on Cornell research to make crucial decisions about controlling pests, applying fertilizer and optimal planting and harvesting times. CALS integrated pest management specialists say certain crop pests are arriving weeks earlier than they used to. Scientists are studying the worrisome prospect of potential over wintering by some pest species that normally die out during the colder months. Scientists have studied the productivity of crop plants and how plants respond to changes in temperature. Water resources issues are closely tied to climate change including both quantity and quality issues. Higher variability of surface water flows is expected to exacerbate pollution management and mitigation efforts.

Because carbon dioxide emissions are one of the major causes of global climate change, the study of carbon sequestration is a major research emphasis. Cornell researchers are exploring technological

solutions to storing excess carbon, biomanipulative approaches to capturing carbon for use as fuel, and forest management strategies. Linking the science to the economic viability of each strategy is an area in which we have tremendous strength.

These stressors to human habitability will be borne disproportionately by the most vulnerable of human populations: the poor, the old and the young. Poor populations have limited resources to adapt to changes and stresses. Older populations are among the most at risk due to decreased mobility, changes in physiology, and more limited access to resources, all of which may limit adaptive capacity. Children, who have been underestimated in roles they might play in disaster preparedness, could face undue burdens in adapting to negative events caused by climate change and need tailored communications related to climate change challenges. Vulnerable populations will face adaptive challenges to their new environments, with potentially far-reaching implications for health as well as for societal strategies to cope with climate change effects at both the population and policy level.

Technical knowledge of climate change issues and mitigation strategies is evolving rapidly and there is much confusion and skepticism and limited climate change literacy across audiences.

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

- New science is needed for the reduction and mitigation of climate change.
- Adaptation to climate change is necessary and must begin now, especially for climate-sensitive industries and populations.
- Tackling the issues of climate change requires multidisciplinary, multi-institutional and collaborative research and extension efforts.
- Integrated system approaches are needed to expand our understanding of trade-offs and develop approaches that address current and future challenges of climate change.
- Producers, natural resource managers, community leaders and individuals often are not fully aware of potential environmental impacts of their operations and actions and alternatives that would reduce factors that contribute to climate change.
- Technical assistance providers relied upon by producers, horticultural business people, and natural resource managers have parallel needs for current information on climate change.
- Residential, institutional and business conservation is a critical component in reducing the human carbon footprint.
- Knowledge of the interactions of environmental resources, public health, quality of life, and local economies will lead to an involved, proactive citizenry.

2. Ultimate goal(s) of this Program

• Reduce factors contributing to climate change at the individual, community, industry, and institutional levels.
• Develop an agriculture system that maintains high productivity in the face of climate changes.
• Help producers and communities adapt to chang-ing environments.
• Sustain economic vitality, identify challenges, and take advantage of emerging economic opportunities offered by climate change mitigation technologies.

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
2012	70.0	0.0	11.5	0.0
2013	70.0	0.0	11.5	0.0
2014	70.0	0.0	11.5	0.0
2015	70.0	0.0	11.5	0.0
2016	70.0	0.0	11.5	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

This is a comprehensive effort entailing a wide range of applied research activities and multiple education methods depending on local context and need. Campus-based faculty and extension associates, regional specialists and county-based educators all are involved in designing, implementing, and evaluating tailored applied research and educational efforts depending on the focus and scope of their role. Example targeted activities include a comprehensive "Northeast Climate Impacts Assessment" that details potential impacts on crops, dairy, forests, and invasive pest species for the region and the Cornell Computational Agricultural Project that is compiling daily weather data and using complex computing tools to create a user friendly website and database for farmers to help them make critical decisions as they adapt to the changing environment. Climate change is tied intimately to sustainable energy concerns. Therefore, climate change is an important element of energy literacy initiatives across all audiences including youth.

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	☐ Billboards
☑ Group Discussion	☑ Newsletters
☑ One-on-One Intervention	☑ TV Media Programs
☑ Demonstrations	☑ Web sites
☐ Other 1	☐ Other 1
☐ Other 2	☐ Other 2

3. Description of targeted audience

Key audiences served, directly and indirectly include: agricultural, horticultural and natural resource producers; consultants and service providers, resource managers, governmental agencies, and local/state/federal governmental leaders and policy makers, individual consumers, and youth.

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2012	65000	700000	25000	425000
2013	65000	700000	25000	425000
2014	65000	700000	25000	425000
2015	65000	700000	25000	425000
2016	65000	700000	25000	425000

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

2012:2 **2013:**2 **2014:**2 **2015:**2 **2016:**2

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2012	100	30	130
2013	100	30	130
2014	100	30	130
2015	100	30	130
2016	100	30	130

V(H). State Defined Outputs

1. Output Target

- 2.1a # of agricultural/natural resources producers, and/or organization and business representatives completing educational programs on the causes and implications of climate change and adaptive or mitigating strategies.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- 2.2a # of local government officials and community leaders completing educational programs on causes and implications of climate change and adaptive or mitigating strategies.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- 2.3a # of adult and youth consumers, residents, and landowners completing educational programs on causes and implications of climate change and adaptive or mitigating strategies.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- 2.4a # of agricultural/natural resources producers, and/or organization and business representatives completing educational programs on managing water resources and/or environmental planning.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- 2.5a # of government officials and community leaders completing educational programs on managing water resources and the relationship between water resources and land use management.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- 2.6a # of adult and youth consumers, residents, and landowners completing educational programs on water resources protection.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- 2.7a # of agricultural/ natural resources producers, and/or organization and business representatives completing educational programs on managing natural resources, invasive species, and/or biodiversity.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- 2.8a # of local government officials and community leaders completing educational programs on managing natural resources, invasive species, open space preservation, alternative land uses and/or biodiversity.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- 2.9a # of adult and youth consumers, residents, and landowners completing educational programs on natural resources protection, invasive species, and/or biodiversity.

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

V(I). State Defined Outcome

O. No	Outcome Name
1	2.1b # of agricultural/natural resources producers, and/or organization and business representatives who demonstrate knowledge gains about on the causes and implications of climate change and adaptive or mitigating strategies.
2	2.1c # agricultural/natural resources producers, and/or organization and business representatives documented to have modified existing practices or technologies and/or adopted new management practices to minimize their contribution to climate change and/or adapt to climate change effects.
3	2.1d # agricultural/natural resources producers, and/or organization and business representatives documented to have successfully adapted to climate change effects enhancing economic viability.
4	2.2b # of local government officials and community leaders who demonstrate knowledge gains about causes and implications of climate change and adaptive or mitigating strategies.
5	2.2c # of local government officials and community leaders documented to have modified existing practices or technologies and/or adopted new management practices to minimize their contribution to climate change and/or adapt to climate change effects.
6	2.2d # of communities documented to have established or modified public policies to minimize contribution to climate change and/or adapt to climate change effects.
7	2.3b # of adult and youth consumers, residents, and landowners who demonstrate knowledge gains on causes and implications of climate change and adaptive or mitigating strategies.
8	2.3c # of adult and youth consumers, residents, and landowners documented to have modified existing practices and/or adopted new practices to minimize their contribution to climate change and/or adapt to climate change effects.
9	2.4b # of agricultural/natural resources producers, and/or organization and business representatives who demonstrate knowledge gains about managing water resources.
10	2.4c # agricultural/natural resources producers, and/or organization and business representatives documented to have modified existing practices or technologies and/or adopted new practices to protect/enhance water resources.
11	2.4d # agricultural/ natural resources producers, and/or organization and business representatives documented to have improved and/or protected water resources.
12	2.5b # of government officials and community leaders who demonstrate knowledge gains about managing water resources and the relationship between water resources and land use management.
13	2.5c # of government officials and community leaders documented to have modified existing practices or technologies and/or adopted new practices to protect/enhance water resources.
14	2.5d # of communities documented to have established or modified land use and development policies to enhance and protect water resources.
15	2.6b # of adult and youth consumers, residents, and landowners who demonstrate knowledge gains about water resources protection.
16	2.6c # of adult and youth consumers, residents, and landowners documented to have modified existing practices or adopted new practices to protect/enhance water resources.
17	2.6d # of adult and youth consumers, residents, and landowners documented to have successfully modified existing practices and/or adopted new practices leading to improved protection/enhancement of water resources.
18	2.7b # of agricultural/ natural resources producers, and/or organization and business representatives who demonstrate knowledge gains about managing natural resources, invasive species, and/or biodiversity.
19	2.7c # of agricultural/ natural resources producers, and/or organization and business representatives documented to have modified existing practices or technologies and/or adopted new practices to protect/enhance natural resources and/or enhance biodiversity.
20	2.7d # of documented instances in which implementation of natural resources management practices by agricultural/ natural resources producers, and/or organization and business representatives lead to increase open space preservation, enhanced/ protected natural resources, biodiversity, land use.

21	2.8b # of local government officials and community leaders who demonstrate knowledge gains about managing natural resources, invasive species, open space preservation, alternative land uses and/or biodiversity.
22	2.8c # of local government officials and community leaders documented to have modified existing practices or technologies and/or adopted new management practices to protect/enhance natural resources and/or enhance biodiversity.
23	2.8d # of documented instances in which implementation of natural resources management practices and/or land use policies lead to increased open space preservation, enhanced or protected natural resources, enhanced biodiversity, and/or increased alternative land use.
24	2.9b # of adult and youth consumers, residents, and landowners who demonstrate knowledge gains about natural resources management, invasive species, and/or biodiversity.
25	2.9c # of adult and youth consumers, residents, and landowners documented to have modified existing practices and/or adopted new practices to protect/enhance natural resources and/or enhance biodiversity.
26	2.9d # of documented instances in which implementation of natural resources management practices by individual consumers, residents, and/or private landowners lead to increased open space preservation, enhanced or protected natural resources or enhanced biodiversity.

Outcome # 1

1. Outcome Target

2.1b # of agricultural/natural resources producers, and/or organization and business representatives who demonstrate knowledge gains about on the causes and implications of climate change and adaptive or mitigating strategies.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☑ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☑ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☑ 141 - Air Resource Protection and Management
- ☑ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 2

1. Outcome Target

2.1c # agricultural/natural resources producers, and/or organization and business representatives documented to have modified existing practices or technologies and/or adopted new management practices to minimize their contribution to climate change and/or adapt to climate change effects.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:350	**2013:**350	**2014:**350	**2015:**350	**2016:**350

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water
- ☐ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☑ 133 - Pollution Prevention and Mitigation
- ☐ 135 - Aquatic and Terrestrial Wildlife
- ☐ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☑ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 3

1. Outcome Target

2.1d # agricultural/natural resources producers, and/or organization and business representatives documented to have successfully adapted to climate change effects enhancing economic viability.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 135 - Aquatic and Terrestrial Wildlife
- ☐ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 4

1. Outcome Target

2.2b # of local government officials and community leaders who demonstrate knowledge gains about causes and implications of climate change and adaptive or mitigating strategies.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:50 **2013:**50 **2014:**50 **2015:**50 **2016:**50

3. Associated Knowledge Area(s)

- ☑ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water

- ☑ 112 - Watershed Protection and Management
- ☑ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☑ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☑ 141 - Air Resource Protection and Management
- ☑ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☑ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 5

1. Outcome Target

2.2c # of local government officials and community leaders documented to have modified existing practices or technologies and/or adopted new management practices to minimize their contribution to climate change and/or adapt to climate change effects.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☑ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☑ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 6

1. Outcome Target

2.2d # of communities documented to have established or modified public policies to minimize contribution to climate change and/or adapt to climate change effects.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☑ 133 - Pollution Prevention and Mitigation
- ☐ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☑ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 7

1. Outcome Target

2.3b # of adult and youth consumers, residents, and landowners who demonstrate knowledge gains on causes and implications of climate change and adaptive or mitigating strategies.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☑ 133 - Pollution Prevention and Mitigation
- ☐ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☑ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 8

1. Outcome Target

2.3c # of adult and youth consumers, residents, and landowners documented to have modified existing practices and/or adopted new practices to minimize their contribution to climate change and/or adapt to climate change effects.

2. Outcome Type :

- ( ) Change in Knowledge Outcome Measure
- (●) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:1500 **2013:**1500 **2014:**1500 **2015:**1500 **2016:**1500

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements

- ☑ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☑ 133 - Pollution Prevention and Mitigation
- ☐ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☑ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 9

1. Outcome Target

2.4b # of agricultural/natural resources producers, and/or organization and business representatives who demonstrate knowledge gains about managing water resources.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 135 - Aquatic and Terrestrial Wildlife
- ☐ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 10

1. Outcome Target

2.4c # agricultural/natural resources producers, and/or organization and business representatives documented to have modified existing practices or technologies and/or adopted new practices to protect/enhance water resources.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:2000	**2013:**2000	**2014:**2000	**2015:**2000	**2016:**2000

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☐ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☐ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 11

1. Outcome Target

2.4d # agricultural/ natural resources producers, and/or organization and business representatives documented to have improved and/or protected water resources.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:750 **2013:**750 **2014:**750 **2015:**750 **2016:**750

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☑ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☐ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 12

1. Outcome Target

2.5b # of government officials and community leaders who demonstrate knowledge gains about managing water resources and the relationship between water resources and land use management.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water

- ☑ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☑ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☐ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 13

1. Outcome Target

2.5c # of government officials and community leaders documented to have modified existing practices or technologies and/or adopted new practices to protect/enhance water resources.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:175 **2013:**175 **2014:**175 **2015:**175 **2016:**175

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☑ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☐ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 14

1. Outcome Target

2.5d # of communities documented to have established or modified land use and development policies to enhance and protect water resources.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:20 **2013:**20 **2014:**20 **2015:**20 **2016:**20

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☑ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☐ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 15

1. Outcome Target

2.6b # of adult and youth consumers, residents, and landowners who demonstrate knowledge gains about water resources protection.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☑ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☐ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 16

1. Outcome Target

2.6c # of adult and youth consumers, residents, and landowners documented to have modified existing practices or adopted new practices to protect/enhance water resources.

2. Outcome Type :

- ( ) Change in Knowledge Outcome Measure
- (●) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:5000 **2013:**5000 **2014:**5000 **2015:**5000 **2016:**5000

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water

- ☑ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☑ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☐ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 17

1. Outcome Target

2.6d # of adult and youth consumers, residents, and landowners documented to have successfully modified existing practices and/or adopted new practices leading to improved protection/enhancement of water resources.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:2000 **2013:**2000 **2014:**2000 **2015:**2000 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☑ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☑ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☐ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 18

1. Outcome Target

2.7b # of agricultural/ natural resources producers, and/or organization and business representatives who demonstrate knowledge gains about managing natural resources, invasive species, and/or biodiversity.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☐ 111 - Conservation and Efficient Use of Water
- ☐ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☐ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☑ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 19

1. Outcome Target

2.7c # of agricultural/ natural resources producers, and/or organization and business representatives documented to have modified existing practices or technologies and/or adopted new practices to protect/enhance natural resources and/or enhance biodiversity.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:750 **2013:**750 **2014:**750 **2015:**750 **2016:**750

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☐ 111 - Conservation and Efficient Use of Water
- ☐ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☐ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☑ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 20

1. Outcome Target

2.7d # of documented instances in which implementation of natural resources management practices by agricultural/ natural resources producers, and/or organization and business representatives lead to increase open space preservation, enhanced/ protected natural resources, biodiversity, land use.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements

- ☐ 111 - Conservation and Efficient Use of Water
- ☐ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☐ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 21

1. Outcome Target

2.8b # of local government officials and community leaders who demonstrate knowledge gains about managing natural resources, invasive species, open space preservation, alternative land uses and/or biodiversity.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☐ 111 - Conservation and Efficient Use of Water
- ☐ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☐ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 22

1. Outcome Target

2.8c # of local government officials and community leaders documented to have modified existing practices or technologies and/or adopted new management practices to protect/enhance natural resources and/or enhance biodiversity.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:200 **2013:**200 **2014:**200 **2015:**200 **2016:**200

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☐ 111 - Conservation and Efficient Use of Water
- ☐ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☐ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☑ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 23

1. Outcome Target

2.8d # of documented instances in which implementation of natural resources management practices and/or land use policies lead to increased open space preservation, enhanced or protected natural resources, enhanced biodiversity, and/or increased alternative land use.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:35 **2013:**35 **2014:**35 **2015:**35 **2016:**35

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☐ 111 - Conservation and Efficient Use of Water
- ☐ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☐ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 24

1. Outcome Target

2.9b # of adult and youth consumers, residents, and landowners who demonstrate knowledge gains about natural resources management, invasive species, and/or biodiversity.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☐ 111 - Conservation and Efficient Use of Water

- ☐ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☐ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☑ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 25

1. Outcome Target

2.9c # of adult and youth consumers, residents, and landowners documented to have modified existing practices and/or adopted new practices to protect/enhance natural resources and/or enhance biodiversity.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:5500 **2013:**5500 **2014:**5500 **2015:**5500 **2016:**5500

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☐ 111 - Conservation and Efficient Use of Water
- ☐ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☐ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☑ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 26

1. Outcome Target

2.9d # of documented instances in which implementation of natural resources management practices by individual consumers, residents, and/or private landowners lead to increased open space preservation, enhanced or protected natural resources or enhanced biodiversity.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:1000 **2013:**1000 **2014:**1000 **2015:**1000 **2016:**1000

3. Associated Knowledge Area(s)

- ☐ 104 - Protect Soil from Harmful Effects of Natural Elements
- ☐ 111 - Conservation and Efficient Use of Water
- ☐ 112 - Watershed Protection and Management
- ☐ 125 - Agroforestry
- ☑ 132 - Weather and Climate
- ☐ 133 - Pollution Prevention and Mitigation
- ☑ 135 - Aquatic and Terrestrial Wildlife
- ☑ 136 - Conservation of Biological Diversity
- ☐ 141 - Air Resource Protection and Management
- ☑ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 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.)
- ☐ Other

Description

Climate change issues play out in a complex and volatile context involving weather extremes, changing governmental policies and regulations, competitive land uses and shifting development patterns, evolving consumer demands, and globally influenced markets. The specific implications of these external factors vary greatly by locale and across commodities and business forms. Technical knowledge of climate change issues and mitigation strategies is evolving rapidly. There is growing antagonism between climate skeptics and climate scientists further polarizing the issue.

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

Description

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation "system" rather than as bounded "studies" or investigations. Because each of the plans addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

2. Data Collection Methods

- ☑ Sampling
- ☑ Whole population

Survey (Mail, Telephone, On-Site).

- ☑ Mail
- ☑ Telephone
- ☑ On-Site

Interview

- ☑ Structured
- ☑ Unstructured

- ☑ Case Study
- ☑ Observation
- ☐ Portfolio Reviews
- ☑ Tests
- ☑ Journals
- ☐ Other

Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected "success stories.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Sustainable Energy

2. Brief summary about Planned Program

With some of the highest energy costs in the nation, New York residents, businesses, and organizations need current information and decision-making criteria and approaches for energy supply alternatives and practical energy conservation and cost-saving measures to maintain financial security and vitality. Additionally, with more than 1 million acres of viable and non-food producing land available for production of biomass, and organic waste streams from dairy farms and concentrated urban areas, New York has multiple resource streams to contribute to the small, distributive renewable energy systems that are considered a vital part of forward-looking national energy policy. Producers and community leaders are hungry for information on viable renewable energy production and strategies to promote energy conservation, while farmers, forest owners and agricultural producers are eager to explore new markets.

3. Program existence :

- ○ New (One year or less)
- ◉ Intermediate (One to five years)
- ○ Mature (More than five years)

4. Program duration :

- ○ Short-Term(One year or less)
- ○ Medium-Term (One to five years)
- ◉ Long-Term (More than five years)

5. Expending formula funds or state-matching funds :

- ◉ Yes
- ○ No

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

- ◉ Yes
- ○ 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
123	Management and Sustainability of Forest Resources	18%		33%	
124	Urban Forestry	10%		12%	
401	Structures, Facilities, and General Purpose Farm Supplies	14%		0%	
402	Engineering Systems and Equipment	8%		9%	
403	Waste Disposal, Recycling, and Reuse	25%		22%	
404	Instrumentation and Control Systems	5%		8%	
605	Natural Resource and Environmental Economics	20%		16%	
	Total	100%		100%	

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

1. Situation and priorities

Our sustainable energy program has two broad emphases: Energy and Agriculture and Consumer and Community Energy Resources. The agriculture program addresses NIFA priorities related to the goal of energy independence, development of biomass for bioenergy, design of optimum forestry and crops for bioenergy production, and production of value-added bio-based industrial products. The program also addresses energy conservation through agricultural applications of additional energy alternatives such as wood and grass pellet fuel production, recycling of vegetable oils as biodiesel, wind and solar energy production. Conversion of corn to ethanol, wind and hydro are currently driving alternative energy systems in the U.S. Longer term, grasses and/or wood products will provide a substantial source of cellulosic ethanol and other bioenergy to meet the world's energy needs. We have research strengths to pursue these opportunities and the agricultural and forestry resources to contribute substantively to energy production.

The Consumer and Community Energy Resources Program is a multi-emphasis, multi-audience effort addressing community decision makers and individual consumers. High energy costs, particularly affecting the Northeast, further impact household budgets. New York State imports 85 percent of the energy it consumes. Reducing this figure through increased energy efficiency will lead toward a more secure energy future with a decreased dependence on imported energy, protection of our environmental resources, and increased economic development and job growth. On average, New Yorkers spend $1,724 annually on energy per household. Reducing this figure creates more household disposable income which, in turn, spurs economic growth. Lower-income homeowners and renters are particularly hard hit by escalating energy costs and need appropriate alternatives for conserving energy and reducing costs, particularly for housing and transportation. A wide array of energy subsidies and conservation incentives are available to individuals and community organizations, but they are fractionated and unevenly available leading to confusion and inequitable treatment. Community agencies/organizations and local governments need to understand how their policies and practices influence energy use and adopt strategies to promote energy conservation. To realize economic development related to the green economy, workforce and business opportunities need to be fully understood. In addition, proposed large scale development of the

Marcellus Shale natural gas reserve using hydrofracking technology is posing challenging decisions for individuals and communities in New York. It is a classic face-off between economic development and environmental interests.

With a wide range of waste producers, including individual, agricultural, industrial, and government, New York residents, agricultural producers, businesses and industry, and government need current information and solutions on techniques for managing waste, reducing waste at the source, minimizing energy use and costs, and managing the risk and environmental inequities resulting from waste generation and disposal practices.

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

- There are new and renewed opportunities for locally owned energy production.

Small distributive energy systems will be more economically feasible given biomass characteristics than large-scale production. Energy expenditures on local or in-state owned production alternatives stay in the state and local economies to the betterment of residents.

- Reduction of energy use provides cost savings to businesses and may retain dollars in the state and local economies.
- Significant barriers to the widespread adoption of renewable energy technologies - economic, environmental, social, logistic and physical--can be overcome with dedicated research and extension.
- As a major energy consumer, New York can contribute substantively to energy independence through energy conservation and adoption of renewable energy sources.
- Producers, local government, individuals, organizations, and businesses and industry often are not fully aware of potential environmental impacts of their operations and/or requirements and opportunities of environmental regulations and programs.
- Technical assistance providers relied upon by producers, local government, individuals, organizations, and businesses and industry have parallel needs for current information on appropriate waste management and reduction practices.
- Increased adoption of "clean" renewable energy technologies will help mitigate the threat of climate change.

2. Ultimate goal(s) of this Program

- New York State becomes a leader in pursuing the national goal of energy independence.
- Use of locally produced and owned energy sources and/or lower cost external sources retains energy dollars within the local and state economy providing enhanced economic well being.
- The economic vitality of agricultural/horticulture/natural resource and supporting businesses, the financial security of individuals and families are enhanced and local government operations made more sustainable through reduced energy costs.
- Improved waste management and waste reduction efforts will result in an enhanced and protected

environment, including improved soil, air, and water quality, and reduced risk for individuals and families.

• The economic vitality of agricultural/natural resources and other businesses is improved, the health of individuals and families are enhanced, and local government operations are made more sustainable through waste reduction and economical and safe management of waste.

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
2012	175.0	0.0	4.0	0.0
2013	175.0	0.0	4.0	0.0
2014	175.0	0.0	4.0	0.0
2015	175.0	0.0	4.0	0.0
2016	175.0	0.0	4.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

This is a program entailing a wide range of applied research activities and multiple education methods depending on local context and need. Campus-based faculty and extension associates, regional specialists and county-based educators all are involved in designing, implementing, and evaluating tailored applied research and educational efforts depending on the focus and scope of their role. In Spring 2010 we launched a major statewide educational initiative based on a team of four specialists located regionally, four campus faculty in leadership roles, and several program work teams. The team is focusing on biofuels and agricultural energy, household energy, community energy planning, and youth involvement in energy.

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	☐ Billboards
☑ Group Discussion	☑ Newsletters
☑ One-on-One Intervention	☑ TV Media Programs
☑ Demonstrations	☑ Web sites
☐ Other 1	☐ Other 1
☐ Other 2	☐ Other 2

3. Description of targeted audience

Agricultural/horticulture/natural resource and supporting businesses are targeted both regarding bioenergy production opportunities and information regarding alternative energy sources and conservation. Policy education efforts relate to development of agriculture and natural resources based alternative energy sources.

Consumers, property managers, and community leaders are targeted for information regarding energy supply alternatives and energy conservation options for residential, facilities, and transportation needs. Citizens, community agencies and organizations are targeted for energy-related policy education efforts particularly as related to development of alternative energy sources and the interaction between land use and energy conservation.

Residents and property owners are targeted with stewardship and waste reduction and management in their homes and on their properties. Businesses, organizations, and producers are targeted with information about reducing impacts of their operations. Local government and community leaders are targeted with information related to governmental management of waste, such as relationship between waste management and land use, effective recycling programs, and roadkill management. Environmental planners and managers and technical assistance providers are targeted with in-depth information related to their audiences/constituents. Teachers and youth professionals and volunteers are provided with curriculum and training. Youth are targeted with age appropriate education.

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2012	35000	1000000	10000	175000
2013	35000	1000000	10000	175000
2014	35000	1000000	10000	175000
2015	35000	1000000	10000	175000
2016	35000	1000000	10000	175000

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

2012:2 **2013:**2 **2014:**2 **2015:**2 **2016:**2

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2012	45	25	70
2013	45	25	70

Year	Research Target	Extension Target	Total
2014	45	25	70
2015	45	25	70
2016	45	25	70

V(H). State Defined Outputs

1. Output Target

- (3.1a) # agricultural producers and agribusiness representatives completing educational programs on the potential for development of biologically-based fuels.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (3.1b) # local and state leaders completing educational programs on the potential for development of biologically-based fuels such as biodiesel, ethanol, methane, recycled vegetable oils, space heating fuels etc.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (3.1c) # agricultural producers and agribusiness, and natural resource business representatives completing educational programs about cropping for bioenergy production.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (3.2a) # agricultural/horticulture/ natural resource and supporting business representatives completing educational programs about the availability and pros and cons of alternative energy sources and/or about potential energy savings in operations.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (3.3a) # consumers and community leaders completing educational programs about the availability and pros and cons of alternative energy.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (3.4a) # consumers, property managers, and/or housing officials completing educational programs about potential energy cost savings, including selecting energy providers, and energy conservation strategies and measures especially related to housing and transportation.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (3.5a) # community members, leaders and officials completing education programs about the relationships between development patterns and energy use/costs.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (3.5b) # of workforce professionals, economic developers and/or entrepreneurs participating in educational programs on energy workforce and business opportunities.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (3.6a) agricultural/natural resources producers, organization and business representatives, community leaders, and/or residents completing educational programs on managing and reducing waste
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

V(I). State Defined Outcome

O. No	Outcome Name
1	(3.1d) # agricultural producers, agribusiness, or local and state leaders who demonstrate knowledge gains about the potential for development of biologically-based fuels.
2	(3.1e) # forest owners and purchasers of forest products who demonstrate knowledge or skills gains about current markets for firewood and chips/pellets and associated cropping practices.
3	(3.1f) # producers, economic development organizations and other groups who collaborate to establish bioenergy as a viable alternative crop.
4	(3.1g) # of existing or new producers documented to have modified existing practices or technologies and/or adopted new production management practices for bioenergy production.
5	(3.1.h) # of producers, horticulture businesses and/or natural resource managers reporting that cropping for and/or use of bioenergy leads to increased economic returns to their enterprises.
6	(3.2b) # agricultural/horticulture/ natural resource and supporting businesses who demonstrate knowledge or skills gains about the availability and pros and cons of alternative energy sources and/or potential energy savings in operations.
7	(3.2c) # of agricultural/horticultural/ natural resource businesses documented to have adopted appropriate alternative energy sources and/or energy conservation practices.
8	(3.2d) # of producers/horticulture businesses/natural resource managers documented to have improved economic returns to agricultural/ horticultural business profitability and vitality resulting from adopting alternative energy sources and/or energy conservation.
9	(3.3b) # consumers and/or community leaders who demonstrate knowledge or skills gains about the availability and pros and cons of alternative energy sources especially related to housing and transportation.
10	(3.3c) # of consumers documented to have adopted appropriate alternative energy sources.
11	(3.3d) # of consumers who report savings on energy costs attributable to adopting alternative energy sources.
12	(3.4b) # consumers, property managers, and/or housing officials who demonstrate knowledge or skills gains and/or can articulate specific actions they will take related to energy cost controls and conservation measures especially related to housing and transportation.
13	(3.4c) # of consumers reporting to have adopted appropriate energy cost control and/or conservation practices.
14	(3.4d) # of property managers, and/or housing officials documented to have taken measures to improve energy cost control or efficiency of existing and new buildings.
15	(3.4e) # of consumers who report savings on energy costs attributable to adopting energy conservation measures.
16	(3.5c) # community members, leaders and officials who demonstrate knowledge gains about the relationships between development patterns and energy use/costs.
17	(3.5e) # communities documented to have assessed local energy development proposals and/or the relationships between current policies and regulations and energy conservation.
18	(3.5f) # of community agencies/organizations documented to have adopted appropriate alternative energy sources.
19	(3.5h) # of communities documented to have established or modified land use and development policies to promote energy conservation.
20	(3.5i) # of community agencies/organizations reporting savings on energy costs attributable to adopting alternative energy sources.
21	(3.5d) # of workforce professionals, economic developers and/or entrepreneurs demonstrating knowledge gains related to energy workforce and business opportunities.
22	(3.5g) # of new workers trained and energy-related businesses established at least in part due to participation in the program.

23	(3.5j) # of communities that report increased diversification of their local economies attributable at least in part to participation in the program.
24	(3.6 b) number of agricultural/natural resources producers, organization and business representatives, community leaders, and/or residents who demonstrate knowledge gains about waste management and reduction
25	(3.6 c) agricultural/natural resources producers, organization and business representatives, community leaders, and/or residents documented to have modified existing practices or technologies and/or adopted new practices to manage and reduce waste
26	(3.6d) number of agricultural/natural resources producers, organization and business representatives, community leaders, and/or residents documented to have reduced costs through improved waste management practices

Outcome # 1

1. Outcome Target

(3.1d) # agricultural producers, agribusiness, or local and state leaders who demonstrate knowledge gains about the potential for development of biologically-based fuels.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☑ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☑ 404 - Instrumentation and Control Systems
- ☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 2

1. Outcome Target

(3.1e) # forest owners and purchasers of forest products who demonstrate knowledge or skills gains about current markets for firewood and chips/pellets and associated cropping practices.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☑ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☐ 404 - Instrumentation and Control Systems
- ☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 3

1. Outcome Target

(3.1f) # producers, economic development organizations and other groups who collaborate to establish bioenergy as a viable alternative crop.

2. Outcome Type :

- ( ) Change in Knowledge Outcome Measure
- (●) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:1000 **2013:**1000 **2014:**1000 **2015:**1000 **2016:**1000

3. Associated Knowledge Area(s)

- ☑ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☑ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☑ 404 - Instrumentation and Control Systems

☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

☑ 1862 Extension
☑ 1862 Research

Outcome # 4

1. Outcome Target

(3.1g) # of existing or new producers documented to have modified existing practices or technologies and/or adopted new production management practices for bioenergy production.

2. Outcome Type :

○ Change in Knowledge Outcome Measure
◉ Change in Action Outcome Measure
○ Change in Condition Outcome Measure

2012:150 **2013:**150 **2014:**150 **2015:**150 **2016:**150

3. Associated Knowledge Area(s)

☐ 123 - Management and Sustainability of Forest Resources
☐ 124 - Urban Forestry
☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
☑ 402 - Engineering Systems and Equipment
☑ 403 - Waste Disposal, Recycling, and Reuse
☑ 404 - Instrumentation and Control Systems
☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

☑ 1862 Extension
☑ 1862 Research

Outcome # 5

1. Outcome Target

(3.1.h) # of producers, horticulture businesses and/or natural resource managers reporting that cropping for and/or use of bioenergy leads to increased economic returns to their enterprises.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:75 **2013:**75 **2014:**75 **2015:**75 **2016:**75

3. Associated Knowledge Area(s)

- ☑ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☑ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☑ 404 - Instrumentation and Control Systems
- ☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 6

1. Outcome Target

(3.2b) # agricultural/horticulture/ natural resource and supporting businesses who demonstrate knowledge or skills gains about the availability and pros and cons of alternative energy sources and/or potential energy savings in operations.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☐ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse

- ☐ 404 - Instrumentation and Control Systems
- ☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 7

1. Outcome Target

(3.2c) # of agricultural/horticultural/ natural resource businesses documented to have adopted appropriate alternative energy sources and/or energy conservation practices.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:250 **2013:**250 **2014:**250 **2015:**250 **2016:**250

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☑ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☑ 404 - Instrumentation and Control Systems
- ☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 8

1. Outcome Target

(3.2d) # of producers/horticulture businesses/natural resource managers documented to have improved economic returns to agricultural/ horticultural business profitability and vitality resulting from adopting alternative energy sources and/or energy conservation.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:50 **2013:**50 **2014:**50 **2015:**50 **2016:**50

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☑ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☑ 404 - Instrumentation and Control Systems
- ☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 9

1. Outcome Target

(3.3b) # consumers and/or community leaders who demonstrate knowledge or skills gains about the availability and pros and cons of alternative energy sources especially related to housing and transportation.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☐ 402 - Engineering Systems and Equipment
- ☐ 403 - Waste Disposal, Recycling, and Reuse

- ☐ 404 - Instrumentation and Control Systems
- ☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 10

1. Outcome Target

(3.3c) # of consumers documented to have adopted appropriate alternative energy sources.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☐ 402 - Engineering Systems and Equipment
- ☐ 403 - Waste Disposal, Recycling, and Reuse
- ☐ 404 - Instrumentation and Control Systems
- ☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 11

1. Outcome Target

(3.3d) # of consumers who report savings on energy costs attributable to adopting alternative energy sources.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☐ 402 - Engineering Systems and Equipment
- ☐ 403 - Waste Disposal, Recycling, and Reuse
- ☐ 404 - Instrumentation and Control Systems
- ☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 12

1. Outcome Target

(3.4b) # consumers, property managers, and/or housing officials who demonstrate knowledge or skills gains and/or can articulate specific actions they will take related to energy cost controls and conservation measures especially related to housing and transportation.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☑ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☐ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse

- ☐ 404 - Instrumentation and Control Systems
- ☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 13

1. Outcome Target

(3.4c) # of consumers reporting to have adopted appropriate energy cost control and/or conservation practices.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:5000 **2013:**5000 **2014:**5000 **2015:**5000 **2016:**5000

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☑ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☐ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☐ 404 - Instrumentation and Control Systems
- ☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 14

1. Outcome Target

(3.4d) # of property managers, and/or housing officials documented to have taken measures to improve energy cost control or efficiency of existing and new buildings.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:100 **2013:**100 **2014:**100 **2015:**100 **2016:**100

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☐ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☑ 404 - Instrumentation and Control Systems
- ☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 15

1. Outcome Target

(3.4e) # of consumers who report savings on energy costs attributable to adopting energy conservation measures.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:3500 **2013:**3500 **2014:**3500 **2015:**3500 **2016:**3500

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☑ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☐ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☐ 404 - Instrumentation and Control Systems

☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

☑ 1862 Extension
☑ 1862 Research

Outcome # 16

1. Outcome Target

(3.5c) # community members, leaders and officials who demonstrate knowledge gains about the relationships between development patterns and energy use/costs.

2. Outcome Type :

◉ Change in Knowledge Outcome Measure
◯ Change in Action Outcome Measure
◯ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

☐ 123 - Management and Sustainability of Forest Resources
☑ 124 - Urban Forestry
☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
☐ 402 - Engineering Systems and Equipment
☐ 403 - Waste Disposal, Recycling, and Reuse
☐ 404 - Instrumentation and Control Systems
☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

☑ 1862 Extension
☑ 1862 Research

Outcome # 17

1. Outcome Target

(3.5e) # communities documented to have assessed local energy development proposals and/or the relationships between current policies and regulations and energy conservation.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:15 **2013:**15 **2014:**15 **2015:**15 **2016:**15

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☑ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☐ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☐ 404 - Instrumentation and Control Systems
- ☐ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 18

1. Outcome Target

(3.5f) # of community agencies/organizations documented to have adopted appropriate alternative energy sources.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:25 **2013:**25 **2014:**25 **2015:**25 **2016:**25

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☐ 402 - Engineering Systems and Equipment
- ☐ 403 - Waste Disposal, Recycling, and Reuse
- ☐ 404 - Instrumentation and Control Systems

☑ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

☑ 1862 Extension
☑ 1862 Research

Outcome # 19

1. Outcome Target

(3.5h) # of communities documented to have established or modified land use and development policies to promote energy conservation.

2. Outcome Type :

○ Change in Knowledge Outcome Measure
○ Change in Action Outcome Measure
◉ Change in Condition Outcome Measure

2012:5 **2013:**5 **2014:**5 **2015:**5 **2016:**5

3. Associated Knowledge Area(s)

☐ 123 - Management and Sustainability of Forest Resources
☑ 124 - Urban Forestry
☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
☐ 402 - Engineering Systems and Equipment
☐ 403 - Waste Disposal, Recycling, and Reuse
☐ 404 - Instrumentation and Control Systems
☐ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

☑ 1862 Extension
☑ 1862 Research

Outcome # 20

1. Outcome Target

(3.5i) # of community agencies/organizations reporting savings on energy costs attributable to adopting alternative energy sources.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:15 **2013:**15 **2014:**15 **2015:**15 **2016:**15

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☑ 124 - Urban Forestry
- ☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☑ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☑ 404 - Instrumentation and Control Systems
- ☐ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 21

1. Outcome Target

(3.5d) # of workforce professionals, economic developers and/or entrepreneurs demonstrating knowledge gains related to energy workforce and business opportunities.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☑ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☑ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☑ 404 - Instrumentation and Control Systems

☐ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

☑ 1862 Extension
☑ 1862 Research

Outcome # 22

1. Outcome Target

(3.5g) # of new workers trained and energy-related businesses established at least in part due to participation in the program.

2. Outcome Type :

○ Change in Knowledge Outcome Measure
○ Change in Action Outcome Measure
◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

☑ 123 - Management and Sustainability of Forest Resources
☐ 124 - Urban Forestry
☐ 401 - Structures, Facilities, and General Purpose Farm Supplies
☑ 402 - Engineering Systems and Equipment
☑ 403 - Waste Disposal, Recycling, and Reuse
☑ 404 - Instrumentation and Control Systems
☐ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

☑ 1862 Extension
☑ 1862 Research

Outcome # 23

1. Outcome Target

(3.5j) # of communities that report increased diversification of their local economies attributable at least in part to participation in the program.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☑ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☑ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☑ 404 - Instrumentation and Control Systems
- ☐ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 24

1. Outcome Target

(3.6 b) number of agricultural/natural resources producers, organization and business representatives, community leaders, and/or residents who demonstrate knowledge gains about waste management and reduction

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☑ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☑ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse

- ☑ 404 - Instrumentation and Control Systems
- ☐ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 25

1. Outcome Target

(3.6 c) agricultural/natural resources producers, organization and business representatives, community leaders, and/or residents documented to have modified existing practices or technologies and/or adopted new practices to manage and reduce waste

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

2012:150 **2013:**150 **2014:**150 **2015:**150 **2016:**150

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☑ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☑ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☑ 404 - Instrumentation and Control Systems
- ☐ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 26

1. Outcome Target

(3.6d) number of agricultural/natural resources producers, organization and business representatives, community leaders, and/or residents documented to have reduced costs through improved waste management practices

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 123 - Management and Sustainability of Forest Resources
- ☐ 124 - Urban Forestry
- ☑ 401 - Structures, Facilities, and General Purpose Farm Supplies
- ☑ 402 - Engineering Systems and Equipment
- ☑ 403 - Waste Disposal, Recycling, and Reuse
- ☑ 404 - Instrumentation and Control Systems
- ☐ 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 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.)
- ☐ Other

Description

The interaction between natural disasters, the economy, and energy costs is well documented. Weather in particular has interrupted supplies and dramatically influences heating and cooling costs. Appropriations, public policy, and regulations directly affect the ability to pursue energy source alternatives, including bioenergy development, and to implement energy conservation alternatives, particularly for low-income households. Government regulation and policies driven by public priorities can change the circumstances of personal finances and the energy market. Public and private funders and CCE may have fewer fiscal resources and other resources to devote to energy

matters although government incentives might offset that.

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

Description

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation "system" rather than as bounded "studies" or investigations. Because each of the plans addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

2. Data Collection Methods

- ☑ Sampling
- ☑ Whole population

Survey (Mail, Telephone, On-Site).

- ☑ Mail
- ☑ Telephone
- ☑ On-Site

Interview

- ☑ Structured
- ☑ Unstructured

- ☑ Case Study
- ☑ Observation
- ☑ Portfolio Reviews

- ☑ Tests
- ☐ Journals
- ☐ Other

Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected "success stories."

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Childhood Obesity -- Nutrition and Childhood Obesity

2. Brief summary about Planned Program

Childhood obesity prevention research and education are based upon an ecological approach focusing on individuals and their interaction among the multiple environments that surround them. This approach recognizes that there are inherent multiple levels of influence that affect a child's body weight. Faculty research topics include nutrition and hunger, nutrition education and behavior, built and community natural environments, promoting physical activity, healthful food availability, food product development and health care organization, services and policies.

Extension programs are designed to 1) connect research and practice, 2) result in behavior change, 3) build on the strengths of families and youth, 4) develop strong collaborations resulting in community changes for optimal health promotion and 5) provide policymakers with the knowledge to develop appropriate policies to promote healthy lifestyles. Extension programs target children, families and the community at large, are collaborative and work directly with key community organizations.

With an emphasis on low and moderate income audiences, CCE programs enable participants to improve the diet, health, and well-being of themselves, their families, and their communities. Food resource management, nutrition, health and fitness knowledge, food preparation and breastfeeding promotion are components of programs for individuals and families. Community initiatives emphasize activities and policies affecting childhood obesity related to foods available and opportunities for physical activity. Cornell Cooperative Extension educators build their capacity to lead and make substantive contributions to integrated action plans for intervention in their communities through continuing professional development such as through the Cornell NutritionWorks 6-week in-depth course on Preventing Childhood Obesity: An Ecological Approach.

Choose Health is a 4-H Youth Development initiative emphasizing physical activity, healthy eating and changes in the home, school and community environments. 4-H Professionals, adult volunteers and 4-H Teen ambassadors use evaluated curricula and pilot-tested activities designed to make healthy behaviors the norm. Programming occurs in camps, after school and with parents and other caregivers.

CCE child-based projects include family support and involvement. Parenting, nutrition and fitness education are woven together through work with parents and other adults who influence children and shape the environments where children live, learn, and play. Projects promote adult and child cooperation for health through activities such as preparing food together and family oriented physical activities.

At the community level, CCE education connects families with farmers' markets and local food initiatives increasing access to healthful foods. Educators contribute to school-based efforts such as "Farm to School", parent involvement in school health and nutrition campaigns, and student in-school and after school education.

3. Program existence :

- ○ New (One year or less)
- ○ Intermediate (One to five years)
- ◉ Mature (More than five years)

4. Program duration :

- ○ Short-Term(One year or less)
- ○ Medium-Term (One to five years)
- ◉ Long-Term (More than five years)

5. Expending formula funds or state-matching funds :

- ◉ Yes
- ○ No

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

- ◉ Yes
- ○ 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
502	New and Improved Food Products	5%		13%	
701	Nutrient Composition of Food	15%		4%	
702	Requirements and Function of Nutrients and Other Food Components	15%		25%	
703	Nutrition Education and Behavior	40%		23%	
724	Healthy Lifestyle	25%		35%	
	Total	100%		100%	

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

1. Situation and priorities

Nearly one-fifth of children in the United States are overweight and have a greater risk for health problems that are placing a major strain on the U.S. health system and economy. Obesity is positively correlated with increased risk of chronic diseases such as cardiovascular disease, diabetes, stroke, hypertension, and some forms of cancer. An estimated 61% of overweight young people have at least one additional risk factor for heart disease, such as high cholesterol or high blood pressure. There is an increasing frequency of type 2 diabetes in children, even pre-adolescent children. Overweight children are at greater risk for bone and joint problems, sleep apnea, and social and psychological problems such as stigmatization and poor self-esteem.

Factors contributing to obesity in children include unhealthy dietary behaviors such as high

consumption of sweetened beverages, low fruit, vegetable, and dairy consumption and limited physical activity. Healthy lifestyle habits, including healthy eating and physical activity, can lower the risk of becoming overweight and developing diseases associated with increased obesity. Food insecurity and obesity or overweight can exist at the same time. This necessitates addressing hunger issues for some populations within programs on childhood obesity.

At the individual child level, both psychosocial influences (including food norms, preferences, knowledge, attitudes, skills, supports and role models) and biological influences (including: age, gender, genes, and physiology) interact within the child to direct eating and activity behaviors. The individual child is also interacting within a family that brings another level of influences on behaviors that include feeding practices, parent and childcare provider interaction related to feeding, family attitudes and attention to health care. At the community and organizational level, the interaction between the individual environment that children are in when not at home further influences their behaviors. Factors such as access to healthy and unhealthy foods in schools and after-school programs, access to healthy foods and activity opportunities in the child's community, local public health programs and policies will all impact the child.

Effective programs are those that target children's eating and activity-based behaviors through approaches aimed at children directly, as well as parental and community involvement, and environmental change. By taking an ecological approach to childhood obesity prevention, CCE professionals consider the many factors associated with childhood obesity and determine how to best create many points of impact that can result in positive change. In some communities, CCE may be a leader and form a coalition to take action on childhood obesity. In other locations, CCE will join existing coalitions and augment projects to increase effectiveness and target populations reached.

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

Childhood overweight and obesity is best addressed ecologically through support of integrated community and family systems. These systems are necessary to promote improved eating and physical activity behaviors of New York State children and to reduce the prevalence of childhood obesity.

The National Institute of Food and Agriculture supports childhood obesity research and education programs on affordable and available nutritious foods and guidance for individuals and families enabling science-based decisions about health and well-being. In New York State, research on the etiology of obesity and chronic disease is applied by Cornell Cooperative Extension (CCE) to locally based nutrition and wellness education developed in partnership with families, youth, health and wellness professionals, and other community-minded individuals and groups. Cornell and other academic research are applied to CCE programs promoting healthful and secure community food systems to address childhood obesity. Neighborhood and community resources complement federal, state, and local government support to implement this outreach.

2. Ultimate goal(s) of this Program

- Affordable, available nutritious foods
- Guidance for families to make science-based decisions about health and well-being
- Prevention of childhood overweight and reduction of long term risks for chronic disease by encouraging healthy eating and increased physical activity
- Improved community food security and healthful food-choice options

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
2012	360.0	0.0	5.0	0.0
2013	360.0	0.0	5.0	0.0
2014	360.0	0.0	5.0	0.0
2015	360.0	0.0	5.0	0.0
2016	360.0	0.0	5.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

This is a statewide multi-disciplinary extension program with emphases cutting across many content areas and audiences. Campus-based faculty and extension associates provide leadership and participate in work teams with CCE educators. Programs draw upon Cornell and other academic research. All are involved in designing, implementing and evaluating tailored outreach. Trained Extension nutritionists and parenting and 4-H educators lead local program activities. Researchers in horticulture and agricultural economics and marketing investigate options for improving local production and direct marketing of fresh produce into areas where they are currently lacking.

Programs for children and youth are delivered through a variety of settings: 4-H camps, clubs, fairs and afterschool as well as through child-parent/grandparent involvement projects and in-school student education. Family-focused programs promote a positive parent/care-giver-child feeding relationship and planning for good nutrition and physical activity. Extension staff collaborate with community leaders to improve the local environment for healthy eating and active living. Activities include sequential learning events, "community workshops" and engagement with community and civic leaders to improve the environment for nutrition and wellness and support of the local food system.

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	☐ Billboards
☑ Group Discussion	☑ Newsletters
☑ One-on-One Intervention	☑ TV Media Programs
☑ Demonstrations	☑ Web sites
☐ Other 1	☑ Other 1 (On-line Instruction)
☐ Other 2	☐ Other 2

3. Description of targeted audience

Audiences reached include: moderate and low income families; 4-H youth; children in and out of school; nutrition, health, and family professionals; front-line family workers; school food service staff; community leaders; and government and agency leaders at the local, state, and federal level.

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2012	125000	1500000	35000	225000
2013	125000	1500000	35000	225000
2014	125000	1500000	35000	225000
2015	125000	1500000	35000	225000
2016	125000	1500000	35000	225000

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

2012:2 **2013:**2 **2014:**2 **2015:**2 **2016:**2

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2012	100	155	255
2013	100	155	255
2014	100	155	255
2015	100	155	255
2016	100	155	255

V(H). State Defined Outputs

1. Output Target

- (4.1a) # children, youth, parents/caregivers and other adults reached via healthy eating and active living programs
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (4.1b) # of women and health providers completing education programs addressing healthy weight gain during pregnancy and breastfeeding
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (4.1c) #of extension educators and/or volunteers participating in training programs to enhance obesity prevention educational opportunities for children and youth, and adults who care for them
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (4.2a) # of program participants reached to improve their food resource management and food security

  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (4.3a) # of community and/or government/ agency members completing educational programs on issues related to childhood obesity prevention programs and policy related to healthy living
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

V(I). State Defined Outcome

O. No	Outcome Name
1	(4.1d) of children, youth, parents/caregivers and other adults who demonstrate knowledge or skill gains related to healthy eating and active living
2	(4.1e) #of women and health providers demonstrating increased knowledge or skill gains related to healthy weight gain during pregnancy and breastfeeding
3	(4.1f) # of extension educators or volunteers demonstrating knowledge or skill gains related to healthy eating and active living programs for obesity prevention
4	(4.1g) # of youth program participants documented to have applied healthy eating and/or active living, recommendations
5	(4.1h) # of adult program participants documented to have applied healthy eating and/or active living, recommendations
6	(4.1i) #of extension educators and/or volunteers reporting increased delivery of healthy living-related programs.
7	(4.1j) # of vulnerable children and youth documented to have reduced incidence of overweight and obesity as a result of participating in relevant educational programs.
8	(4.1k) # of adult program participants documented to have reduced one or more chronic disease indicators associated with overweight.
9	(4.2b) #of program participants who demonstrate knowledge or skill gains related to food resource management and food security
10	(4.2c) # of program participants who adopt food resource management and/or food security practices
11	(4.2d) # of program participants documented to have improved food resource management and/or food security
12	(4.3b) # of program participants who demonstrate increased knowledge or skill gains related to childhood obesity prevention programs and policies
13	(4.3c) # of program participants documented to have increased involvement in public/community childhood obesity prevention actions
14	(4.3d) # of participating schools and/or communities documented to have made practice and/or policy changes to promote healthy eating and active living
15	(4.3e) # of participating schools and/or communities reporting decline in incidence of childhood overweight and/or indicators of chronic diseases associated with obesity.

Outcome # 1

1. Outcome Target

(4.1d) of children, youth, parents/caregivers and other adults who demonstrate knowledge or skill gains related to healthy eating and active living

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 502 - New and Improved Food Products
- ☑ 701 - Nutrient Composition of Food
- ☑ 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

Outcome # 2

1. Outcome Target

(4.1e) #of women and health providers demonstrating increased knowledge or skill gains related to healthy weight gain during pregnancy and breastfeeding

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 502 - New and Improved Food Products
- ☑ 701 - Nutrient Composition of Food
- ☐ 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

Outcome # 3

1. Outcome Target

(4.1f) # of extension educators or volunteers demonstrating knowledge or skill gains related to healthy eating and active living programs for obesity prevention

2. Outcome Type :

◉ Change in Knowledge Outcome Measure
◯ Change in Action Outcome Measure
◯ Change in Condition Outcome Measure

2012:0	**2013:**0	**2014:**0	**2015:**0	**2016:**0

3. Associated Knowledge Area(s)

☑ 502 - New and Improved Food Products
☑ 701 - Nutrient Composition of Food
☑ 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

Outcome # 4

1. Outcome Target

(4.1g) # of youth program participants documented to have applied healthy eating and/or active living, recommendations

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:15000 **2013:**15000 **2014:**15000 **2015:**15000 **2016:**15000

3. Associated Knowledge Area(s)

- ☐ 502 - New and Improved Food Products
- ☑ 701 - Nutrient Composition of Food
- ☐ 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

Outcome # 5

1. Outcome Target

(4.1h) # of adult program participants documented to have applied healthy eating and/or active living, recommendations

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:35000 **2013:**35000 **2014:**35000 **2015:**35000 **2016:**35000

3. Associated Knowledge Area(s)

- ☐ 502 - New and Improved Food Products
- ☑ 701 - Nutrient Composition of Food
- ☐ 702 - Requirements and Function of Nutrients and Other Food Components
- ☑ 703 - Nutrition Education and Behavior
- ☑ 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- [x] 1862 Extension
- [x] 1862 Research

Outcome # 6

1. Outcome Target

(4.1i) #of extension educators and/or volunteers reporting increased delivery of healthy living-related programs.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- [ ] 502 - New and Improved Food Products
- [ ] 701 - Nutrient Composition of Food
- [ ] 702 - Requirements and Function of Nutrients and Other Food Components
- [x] 703 - Nutrition Education and Behavior
- [x] 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- [x] 1862 Extension
- [x] 1862 Research

Outcome # 7

1. Outcome Target

(4.1j) # of vulnerable children and youth documented to have reduced incidence of overweight and obesity as a result of participating in relevant educational programs.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 502 - New and Improved Food Products
- ☑ 701 - Nutrient Composition of Food
- ☑ 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

Outcome # 8

1. Outcome Target

(4.1k) # of adult program participants documented to have reduced one or more chronic disease indicators associated with overweight.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 502 - New and Improved Food Products
- ☐ 701 - Nutrient Composition of Food
- ☐ 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

Outcome # 9

1. Outcome Target

(4.2b) #of program participants who demonstrate knowledge or skill gains related to food resource management and food security

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 502 - New and Improved Food Products
- ☑ 701 - Nutrient Composition of Food
- ☑ 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

Outcome # 10

1. Outcome Target

(4.2c) # of program participants who adopt food resource management and/or food security practices

2. Outcome Type :

- ( ) Change in Knowledge Outcome Measure
- (●) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:12500 **2013:**12500 **2014:**12500 **2015:**12500 **2016:**12500

3. Associated Knowledge Area(s)

- ☐ 502 - New and Improved Food Products
- ☑ 701 - Nutrient Composition of Food
- ☐ 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

Outcome # 11

1. Outcome Target

(4.2d) # of program participants documented to have improved food resource management and/or food security

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:10000 **2013:**10000 **2014:**10000 **2015:**10000 **2016:**10000

3. Associated Knowledge Area(s)

- ☐ 502 - New and Improved Food Products
- ☑ 701 - Nutrient Composition of Food
- ☐ 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

Outcome # 12

1. Outcome Target

(4.3b) # of program participants who demonstrate increased knowledge or skill gains related to childhood obesity prevention programs and policies

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 502 - New and Improved Food Products
- ☑ 701 - Nutrient Composition of Food
- ☑ 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

Outcome # 13

1. Outcome Target

(4.3c) # of program participants documented to have increased involvement in public/community childhood obesity prevention actions

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:7500	**2013:**7500	**2014:**7500	**2015:**7500	**2016:**7500

3. Associated Knowledge Area(s)

- ☐ 502 - New and Improved Food Products
- ☐ 701 - Nutrient Composition of Food
- ☐ 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

Outcome # 14

1. Outcome Target

(4.3d) # of participating schools and/or communities documented to have made practice and/or policy changes to promote healthy eating and active living

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:700 **2013:**700 **2014:**700 **2015:**700 **2016:**700

3. Associated Knowledge Area(s)

- ☐ 502 - New and Improved Food Products
- ☑ 701 - Nutrient Composition of Food
- ☐ 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

Outcome # 15

1. Outcome Target

(4.3e) # of participating schools and/or communities reporting decline in incidence of childhood overweight and/or indicators of chronic diseases associated with obesity.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 502 - New and Improved Food Products
- ☑ 701 - Nutrient Composition of Food
- ☐ 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

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.)
- ☐ Other

Description

The scope and scale of outcomes can be greatly enhanced by augmenting Federal Formula Funds with external sources of support. However, external grant funds may only support certain activities or aspects of this plan. Local governments, an important funder for local extension staff, face diminished revenues and increased mandated costs outside of the non-mandated extension programs. Thus having professionals available to implement new research-based programming is not always possible. A very slow recovery from the recession and pockets of high unemployment in the state affect how public and private funds are allocated to educational activities. In some instances, family subsistence will be a higher priority than improved nutrition and opportunities for physical activity. As an example of the latter, in New York State, cost cutting proposals include closing some public parks and reducing recreational physical activity programs. Some decision-makers and others in the community may not agree with all aspects of an ecological approach to childhood obesity prevention. They may disagree with community or institutional policy changes such as eliminating non-nutritious snacks from after school activities and place all responsibility on the individual and within the family, disregarding most environmental factors outside the family.

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

Description

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation "system" rather than as bounded "studies" or investigations. Because each of the plans addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

Some examples of specialized evaluation for this plan are:

- Initial pilot testing, and cognitive-testing of an after-school food and activity self-assessment tool, designed to help after-school staff think about ways to make healthy choices easier for youth in their programs. The tool will be used in both the Choose Health Ambassador project and in other youth oriented programs.
- Surveys of school food service directors to document perceived changes in personnel and student attitudes toward fresh fruits and vegetables and increased consumption of these foods in conjunction with extension provided program support resources for food service, teachers, and students to increase awareness and to encourage the use of NYS-grown fruits and vegetables.
- Pre- and post-course surveys evaluate the Cornell NutritionWorks course to document effectiveness in increasing knowledge, skills and self-efficacy of nutrition and health professionals to address childhood obesity using an ecological approach. Participants' intended behavior and actual implementation of strategies six months post-course are also studied.

2. Data Collection Methods

- ☑ Sampling
- ☑ Whole population

Survey (Mail, Telephone, On-Site).

- ☑ Mail
- ☑ Telephone
- ☑ On-Site

Interview

- ☑ Structured

- ☑ Unstructured
- ☑ Case Study
- ☑ Observation
- ☐ Portfolio Reviews
- ☑ Tests
- ☐ Journals
- ☐ Other

Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected "success stories."

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Food Safety

2. Brief summary about Planned Program

Cornell's statewide food safety research and education program serves a broad constituency including food producers, processors, distributors, retailers, commercial and institutional food service and retail establishments, consumers-both youth and adult-, and research scientists. The program encompasses NIFA food safety components: causes of microbiological contamination and microbiological resistance, education of consumers and food safety professionals, and developing food processing and storage technologies.

The program to reduce the incidence of food borne illness and provide a safe food supply is developed and delivered through: workshops, community presentations, research-based publications appropriate for targeted audiences, participation in cooperative research projects, development of audio-visual training programs, technical support for policy makers and regulators, technical assistance and timely responses to emergent and continuing state and national outbreaks and issues.

Cornell's National Good Agricultural Practices Program is an example of an educational effort addressing the contemporary issue of the safety of fresh fruits and vegetables. The program provides growers, packing house operators, government officials and industry trade association personnel with educational information and strategies to protect consumer health and reduce hazards and risks in the production of fresh fruits and vegetables. Farm owners and others receive information on microbiological contamination of raw produce during growing, harvesting and processing and assistance in using good agricultural practices and good manufacturing practices to reduce the risks of these hazards. Educational materials designed and developed at Cornell are being used by collaborators in twenty-five states to provide farmers with a better understanding of good agricultural practices.

Consumer education programs focus on safe handling and preparation of foods, conveying important practices in preventing illness along with avoiding food cross-contamination. Programs target moderate and low income adults, 4-H and other youth. Food thermometer use, safely handling perishables and leftovers, safely defrosting meat and poultry and the importance of immediately discarding food that may be unsafe and hand washing are emphasized.

3. Program existence :

- ○ New (One year or less)
- ○ Intermediate (One to five years)
- ◉ Mature (More than five years)

4. Program duration :

- ○ Short-Term(One year or less)
- ○ Medium-Term (One to five years)
- ◉ Long-Term (More than five years)

5. Expending formula funds or state-matching funds :

- ◉ Yes
- ○ No

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

- ◉ Yes
- ○ 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
308	Improved Animal Products (Before Harvest)	5%		2%	
501	New and Improved Food Processing Technologies	10%		36%	
503	Quality Maintenance in Storing and Marketing Food Products	18%		0%	
504	Home and Commercial Food Service	30%		0%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	10%		4%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	15%		23%	
721	Insects and Other Pests Affecting Humans	2%		18%	
723	Hazards to Human Health and Safety	10%		17%	
	Total	100%		100%	

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

1. Situation and priorities

The food supply must be safe to ensure a healthy, well-nourished population. While the United

States has one of the safest food supplies in the world, each year about 76 million illnesses occur, more than 300,000 persons are hospitalized, and 5,000 die from foodborne illness. Illnesses, such as E. coli and salmonella, not only take a toll on American consumers' health, they cost the United States $152 billion annually in health care and other losses, according to a report funded by the Pew Charitable Trusts. Center for Disease Control compiled data indicate that known pathogens account for an estimated 14 million illnesses, 60,000 hospitalizations, and 1,800 deaths. Three pathogens, Salmonella, Listeria, and Toxoplasma, are responsible for 1,500 deaths each year, more than 75% of those caused by known pathogens, while unknown agents account for the remaining 62 million illnesses, 265,000 hospitalizations, and 3,200 deaths. An untold number of foodborne illnesses go unreported because people may not seek medical attention and due to varying capabilities of local and state health departments to collect and report incidences. Food contamination also affects the viability of firms in the food system, from small, to regional to international companies. Recent outbreaks have resulted in large recalls of peanuts, spinach and peppers. In 2008 and early 2009, salmonella contamination in peanut butter crackers and peanut paste sickened 714 people in 46 states and prompted the largest recall in history. Safety from farm to retail and then in the home can be improved through research and its application to training, collaboration among all involved in the food system, and information sharing.

Over the last several decades there has been a noticeable increase in the consumption of fresh fruits and vegetables in the United States. Public health officials have observed significant increases in the number of produce-associated foodborne disease outbreaks. Recently outbreaks of salmonella and *E. coli* infections caused serious health consequences, disrupted the supply of nourishing foods and caused significant economic harm.

A variety of good agricultural and manufacturing practices can reduce the spread of microbes among plant foods and animals and prevent the contamination of foods at retail. The safety of prepared foods is also of concern given the important proportion of foods consumed away from home and purchased already prepared. Targeted training for food producers, preparers and retailers is a priority. In addition, consumer education on proper food handling and preparation in the home is a vital component to ensuring food safety. Consumers continue to improve their food safety practices but some are still unknowingly practicing some unsafe behaviors.The country's ability to pinpoint a food contamination source is hampered by the lack of an integrated system for federal agencies and the food industry to coordinate information through compatible electronic databases. Coordination, practice and policy changes are needed.

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

- Food safety can be increased by improving: agricultural practices before harvest; how foods are processed, stored and marketed and how foods are handled and served in the home and

commercially.
• Cornell and other research on food contamination will be applied to education on effective food safety practices.
• Policies and practices across the food system affect the safety of foods and can be better coordinated.
• Community, federal, state, and local government support will be provided to implement extension outreach.

2. Ultimate goal(s) of this Program

• Provide for the nutritional well-being and safety of New York State residents through helping to assure a continuous, reasonably priced supply of wholesome foods.
• Improve food safety and food-handling practices throughout the food system.
• Reduce incidence of food-borne illnesses.

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
2012	115.0	0.0	8.0	0.0
2013	115.0	0.0	8.0	0.0
2014	115.0	0.0	8.0	0.0
2015	115.0	0.0	8.0	0.0
2016	115.0	0.0	8.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

This is a comprehensive program entailing a wide range of applied research activities and multiple education methods depending on context and need. Campus-based faculty and extension associates, regional specialists and county-based educators all are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

Examples of activities are:

• Convey general knowledge and understanding of food safety science to New York State residents and beyond via varied communication strategies;
• Provide educational programs in collaboration with regulatory agencies involved with assuring the safety and wholesomeness of food processed, prepared, sold and handled and consumed by the public in New York State;
• Via courses, presentations and materials, support transfer of new research-based information for appropriate applications in the agricultural production, manufacturing, retailing and food service industries;

• Communicate current food safety production, manufacturing and technical problems to researchers at Cornell;
• Conduct specialized instruction in the effective application of laboratory methods to maintain and improve product safety and quality in the dairy and food industry.

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	☐ Billboards
☑ Group Discussion	☑ Newsletters
☑ One-on-One Intervention	☑ TV Media Programs
☑ Demonstrations	☑ Web sites
☐ Other 1	☐ Other 1
☐ Other 2	☐ Other 2

3. Description of targeted audience

Audiences reached include: processors, producers and consumers with targeted programs for moderate and low income families; 4-H youth; nutrition, health, and family professionals; front-line family workers; food service and food production staff and their managers and directors; and government and agency leaders at the local, state, and federal level.

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2012	75000	550000	25000	75000
2013	75000	550000	25000	75000
2014	75000	550000	25000	75000
2015	75000	550000	25000	75000
2016	75000	550000	25000	75000

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

2012:2 **2013:**2 **2014:**2 **2015:**2 **2016:**2

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2012	30	50	80
2013	30	50	80
2014	30	50	80
2015	30	50	80
2016	30	50	80

V(H). State Defined Outputs

1. Output Target

- (5.1a) # of consumers in programs on: reducing food safety and/or food borne risks and illnesses including recommended purchasing, handling, storage, and preparation practices
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (5.2a) # of producers/processors/food service providers participating in programs on: reducing food safety and/or food borne risks and illnesses including recommended production, processing, storage, handling, marketing, and preparation practices
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (5.3a) # food safety decision-makers, policy makers and other officials reached with science-based information to improve food safety practices and policies
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

V(I). State Defined Outcome

O. No	Outcome Name
1	(5.1b) # of consumers who demonstrate knowledge or skill gains related to reducing food safety and/or food-borne risks and illnesses including recommended purchasing, handling, storage, and preparation practices
2	(5.1c) # of consumers documented to have implemented new and/or increased application of ongoing safe food purchasing, handling, storage, and preparation practices
3	(5.1d) Reduced incidence of food-borne illness among program participants.
4	(5.2b) # of producers/processors/food service providers who demonstrate knowledge or skill gains related to reducing food safety and/or food-borne risks and illnesses including recommended production, processing, storage, handling, marketing, and preparation practices
5	(5.2c) # of producers/processors/food service providers documented to have implemented new and/or increased application of ongoing safe food production, processing, storage, handling, marketing and preparation practices.
6	(5.2d) Improved safety of foods available through wholesale and retail outlets and institutional foods.
7	(5.3b) # of food safety decision-makers, policy makers and other officials who demonstrate knowledge gains relative to improved food safety practices and policies
8	(5.3c) # of communities/ firms/or organizations documented to have assessed practices or food safety policies as a result of participating in relevant educational programs.
9	(5.3d) # of communities/firms/or organizations documented to have implemented improved practices or food safety policies as a result of participating in relevant educational programs

Outcome # 1

1. Outcome Target

(5.1b) # of consumers who demonstrate knowledge or skill gains related to reducing food safety and/or food-borne risks and illnesses including recommended purchasing, handling, storage, and preparation practices

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 308 - Improved Animal Products (Before Harvest)
- ☑ 501 - New and Improved Food Processing Technologies
- ☑ 503 - Quality Maintenance in Storing and Marketing Food Products
- ☑ 504 - Home and Commercial Food Service
- ☑ 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and
- ☑ 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally
- ☑ 721 - Insects and Other Pests Affecting Humans
- ☑ 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 2

1. Outcome Target

(5.1c) # of consumers documented to have implemented new and/or increased application of ongoing safe food purchasing, handling, storage, and preparation practices

2. Outcome Type :

- ( ) Change in Knowledge Outcome Measure
- (●) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:10500 **2013:**10500 **2014:**10500 **2015:**10500 **2016:**10500

3. Associated Knowledge Area(s)

- ☐ 308 - Improved Animal Products (Before Harvest)
- ☑ 501 - New and Improved Food Processing Technologies
- ☑ 503 - Quality Maintenance in Storing and Marketing Food Products
- ☑ 504 - Home and Commercial Food Service
- ☑ 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and
- ☑ 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally
- ☑ 721 - Insects and Other Pests Affecting Humans
- ☑ 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 3

1. Outcome Target

(5.1d) Reduced incidence of food-borne illness among program participants.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 308 - Improved Animal Products (Before Harvest)
- ☑ 501 - New and Improved Food Processing Technologies
- ☑ 503 - Quality Maintenance in Storing and Marketing Food Products
- ☑ 504 - Home and Commercial Food Service
- ☑ 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and
- ☑ 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally
- ☑ 721 - Insects and Other Pests Affecting Humans
- ☐ 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 4

1. Outcome Target

(5.2b) # of producers/processors/food service providers who demonstrate knowledge or skill gains related to reducing food safety and/or food-borne risks and illnesses including recommended production, processing, storage, handling, marketing, and preparation practices

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 308 - Improved Animal Products (Before Harvest)
- ☑ 501 - New and Improved Food Processing Technologies
- ☑ 503 - Quality Maintenance in Storing and Marketing Food Products
- ☑ 504 - Home and Commercial Food Service
- ☑ 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and
- ☑ 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally
- ☑ 721 - Insects and Other Pests Affecting Humans
- ☑ 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 5

1. Outcome Target

(5.2c) # of producers/processors/food service providers documented to have implemented new and/or increased application of ongoing safe food production, processing, storage, handling, marketing and preparation practices.

2. Outcome Type :

- ( ) Change in Knowledge Outcome Measure
- (●) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 308 - Improved Animal Products (Before Harvest)
- ☑ 501 - New and Improved Food Processing Technologies
- ☑ 503 - Quality Maintenance in Storing and Marketing Food Products
- ☑ 504 - Home and Commercial Food Service
- ☑ 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and
- ☑ 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally
- ☑ 721 - Insects and Other Pests Affecting Humans
- ☑ 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 6

1. Outcome Target

(5.2d) Improved safety of foods available through wholesale and retail outlets and institutional foods.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 308 - Improved Animal Products (Before Harvest)
- ☑ 501 - New and Improved Food Processing Technologies
- ☑ 503 - Quality Maintenance in Storing and Marketing Food Products
- ☑ 504 - Home and Commercial Food Service
- ☑ 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and
- ☑ 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally
- ☑ 721 - Insects and Other Pests Affecting Humans
- ☑ 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 7

1. Outcome Target

(5.3b) # of food safety decision-makers, policy makers and other officials who demonstrate knowledge gains relative to improved food safety practices and policies

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 308 - Improved Animal Products (Before Harvest)
- ☐ 501 - New and Improved Food Processing Technologies
- ☐ 503 - Quality Maintenance in Storing and Marketing Food Products
- ☑ 504 - Home and Commercial Food Service
- ☑ 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and
- ☑ 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally
- ☑ 721 - Insects and Other Pests Affecting Humans
- ☑ 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 8

1. Outcome Target

(5.3c) # of communities/ firms/or organizations documented to have assessed practices or food safety policies as a result of participating in relevant educational programs.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:750 **2013:**750 **2014:**750 **2015:**750 **2016:**750

3. Associated Knowledge Area(s)

- ☐ 308 - Improved Animal Products (Before Harvest)
- ☐ 501 - New and Improved Food Processing Technologies
- ☐ 503 - Quality Maintenance in Storing and Marketing Food Products
- ☑ 504 - Home and Commercial Food Service
- ☑ 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and
- ☑ 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally
- ☑ 721 - Insects and Other Pests Affecting Humans
- ☑ 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 9

1. Outcome Target

(5.3d) # of communities/firms/or organizations documented to have implemented improved practices or food safety policies as a result of participating in relevant educational programs

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:450 **2013:**450 **2014:**450 **2015:**450 **2016:**450

3. Associated Knowledge Area(s)

- ☐ 308 - Improved Animal Products (Before Harvest)
- ☐ 501 - New and Improved Food Processing Technologies
- ☐ 503 - Quality Maintenance in Storing and Marketing Food Products
- ☑ 504 - Home and Commercial Food Service
- ☑ 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and

- ☑ 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally
- ☑ 721 - Insects and Other Pests Affecting Humans
- ☑ 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 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.)
- ☐ Other

Description

Large food illness outbreaks are attributed to a number of factors such as the complexity of evolving microbes and changing food consumption patterns which influences the conduct of research and development of educational programs.

Unknown agents account for approximately 81% of foodborne illnesses and hospitalizations and 64% of deaths, according to the Center for Disease Control, constraining the design of programs.

The lack of an integrated system for federal agencies and the food industry to coordinate food contamination information hampers research and education.

Changing and sometimes complex governmental policies and regulations affect implementation of food safety measures.

Food from countries beyond the US may further complicate control and implementation of effective food safety measures.

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

Description

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation "system" rather than as bounded "studies" or investigations. Because each of the plans addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

2. Data Collection Methods

- ☑ Sampling
- ☑ Whole population

Survey (Mail, Telephone, On-Site).

- ☑ Mail
- ☑ Telephone
- ☑ On-Site

Interview

- ☑ Structured
- ☑ Unstructured

- ☑ Case Study
- ☑ Observation
- ☐ Portfolio Reviews
- ☑ Tests
- ☐ Journals
- ☐ Other

Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit

annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected "success stories."

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Youth, Family, and Community

2. Brief summary about Planned Program

Our Youth, Family, and Community plan reflects the priorities of the NIFA institute of the same title. While each of our other five plans of work include youth, family, and community elements, the programs represented here cut across and support that work. They are foundational to our other plans.

Youth emphases span Positive Youth Development including Life Skill Development and Science, Engineering and Technology. Youth development is defined as an ongoing process through which young people meet their needs and develop competencies they perceive as necessary for survival and transition to adulthood. Science literacy routinely is identified as a key to our economic future. Research links experiential learning with higher student performance in mathematics and science. 4-H has succeeded in providing such learning opportunities to youth.

Family emphases include Human Development and Social Well Being, Economic Well Being, and Quality of Home and Work Environments. Parenting and care practices, care programs and policies affect the quality of life for children, youth, elders and their families. Cornell Cooperative Extension parenting and dependent care programs are designed to integrate research with community education on parenting and infant/child care-giving practices and policies. Research focuses on behavioral and psychological development from conception through later life.

The family economic security extension program empowers low and moderate-income households who are especially vulnerable to financial setbacks and have less disposable income to commit to savings. Education promotes enhancing financial literacy skills and adopting effective management behaviors. The effort includes assistance to low-income households who often live in poor-quality housing that has high levels of radon, carbon monoxide, lead, asbestos, and basement mold. Research draws on a broad-based and diverse set of social science and design methodologies to understand how planning, design and management of the built environment affects individuals, groups, organizations and communities, and how this knowledge can feed the imagination to generate innovative design solutions to pressing social and cultural issues.

Community emphases include community and economic development, connecting people to the land and their environments, the agriculture/community interface, and youth community action. Cornell has a commitment to New York citizens and local officials to build their capacities so they can solve problems and build strong and vibrant communities. The agriculture/community interface program includes efforts that promote community farmland protection initiatives, public issues education related to specific agriculture/community conflict issues and initiatives that promote agricultural and food systems awareness and development. Youth community action involves young people and adults working together in partnership to make valuable contributions to their communities. Our educational programs support inter-municipal and regional collaborations, and new public-private partnerships that spur innovative strategies to address complex community development issues.

3. Program existence :

- ○ New (One year or less)
- ○ Intermediate (One to five years)
- ◉ Mature (More than five years)

4. Program duration :

- ○ Short-Term(One year or less)
- ○ Medium-Term (One to five years)
- ◉ Long-Term (More than five years)

5. Expending formula funds or state-matching funds :

- ◉ Yes
- ○ No

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

- ◉ Yes
- ○ 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
131	Alternative Uses of Land	3%		4%	
134	Outdoor Recreation	1%		7%	
511	New and Improved Non-Food Products and Processes	3%		16%	
607	Consumer Economics	7%		3%	
608	Community Resource Planning and Development	15%		2%	
609	Economic Theory and Methods	0%		2%	
610	Domestic Policy Analysis	4%		6%	
801	Individual and Family Resource Management	8%		3%	
802	Human Development and Family Well-Being	12%		13%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	7%		17%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	4%		2%	
805	Community Institutions, Health, and Social Services	6%		7%	
806	Youth Development	30%		18%	
	Total	100%		100%	

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

1. Situation and priorities

This description includes only limited contextual information to illustrate our primary foci. Priority audiences include youth not formerly served and military youth and families. The development of life skills through experiential learning is the foundation of 4-H programming. Healthy youth development strives to help young people develop the inner resources and skills they need to cope with pressures that might lead them to unhealthy and antisocial behaviors. Participation in high quality after-school programs is linked with a lower incidence of problem behaviors, such as decreased academic failure, substance use, and delinquency. Relative to science literacy, in international comparisons, U.S. student performance in mathematics and science is at or below levels attained by students in other countries in the developed world. Research links experiential learning with higher student performance in mathematics and science.

Shifting to family considerations, effective parenting practices differ across several developmental

stages of childhood, and include a range of outcomes, some of which can be customized to meet special needs, address cultural differences and still be sensitive to the needs of particular family structures. There is a continuing need for education on what constitutes high quality child care to help parents and guardians select and monitor their children's care, and targeted education for other stakeholders and decision-makers affecting these issues. Economic security, financial and other household resource management are educational priorities. There are a multitude of economic challenges facing communities in New York State - and the nation as well. The relatively low income levels of many New Yorkers combined with high debt levels and the slow recovery from the recession creates economic insecurity at the individual, community and state levels.

Relative to communities, our focus is on developing self-capacity among citizens so they can solve problems, improve quality of life, and build strong and vibrant communities. Building local capacity for governance, enhancing local economies, and investing in human capital by providing research-based knowledge, public issues education, and education and training are keys. We work toward the long term sustainability and well being of communities through collaborations and partnerships and promote active and representative participation toward enabling all community members to shape their collective future. Even in the most rural areas, changing populations and land use patterns often bring agriculture/horticulture/natural resource enterprises in contact with neighbors or visitors who do not understand or appreciate the nature of their operations and contributions to the community. Local municipal leaders must balance private property rights, community growth, quality of life issues and environmental protection. Youth-adult partnerships, based on mutual respect and trust, unleash the potential of both young people and adults, and provide a powerful tool to create positive and lasting change for individuals, organizations, and communities.

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

Youth

- Program educators and volunteers who work with youth need training and support in how to incorporate research findings and process into program design at the local level with a focus on how to meet the needs of youth at various stages of their development.
- Curriculum design should incorporate best practices for building life skill competencies and recognize how different delivery methods may impact life skill development.
- Youth have different interests and needs and therefore respond differently to the same opportunities. They should have choices about which activities they participate in and they should have a chance to help shape those activities.
- Many opportunities exist to connect youth to the educational resources of Cornell University in the area of science and technology.

Family

- Most parents and relative caregivers want to do the best they can for their children.
- Parenting and child development knowledge and skills are applicable to many family situations and can improve parent-child interactions and child nurturance over time.
- Selection of high quality child care can be improved through education.
- Increased household disposable income and improved indoor environments will result in improved quality of life for individuals, more prosperous communities and overall improvement in the NYS economy.

Community

- The institutional capacity and needs of New York's smaller and rural local governments are far different than is often defined by larger municipal and state government organizations.
- When a number of communities have a common goal, but each is unable to pursue it separately, collaboration may be a possible solution.
- Local governments experience a "boundary problem" when each community operating alone can not see the problem nor identify what needs to be done because the problem has a multi-jurisdictional nature.
- Knowledge of the interactions of environmental resources, quality of life, and local economies will lead to a involved, proactive citizenry.
- Citizens are concerned about the impacts of a variety of decisions on the environment and on quality of life issues; and that citizens want to pay attention to the connection between work, civic life, and residential patterns.
- Collaboration between agriculture/horticulture/natural resource enterprises, community leaders and members can lead to identification of mutual interests and minimization or resolution of conflicts.
- Youth Community Action (YCA) empowers youth and adults and benefits communities by building youth life skills through experiential learning.

2. Ultimate goal(s) of this Program

Youth

- NIFA: Enhancing youth development
- NIFA: Preparing the next generation of scientists
- Youth lead healthy, satisfying, productive lives
- Youth become caring and contributing members of society enhancing the quality of life for themselves, their families, and their communities
- Youth become life-long learners
- Youth become knowledgeable, contributing participants in science and technology-related issues in their communities and chosen professions

Family

- NIFA: Enabling vibrant and resilient communities
- Improved parenting practices that result in better child and youth outcomes
- Improved parent/care giving practices result in parents and caregivers reporting increased confidence in their roles
- Improved financial status of targeted NYS residents
- Improved indoor air quality in low income households resulting in better health outcomes

Community

• Diverse interests and populations in communities are reflected within and engaged as key stakeholders
• Better utilization of community resources to improve and sustain quality of life
• Strong community networks that link diverse sub-groups
• Increased local capacity for management and protection of local environmental resources
• Conflicts between agriculture/horticulture/natural resource enterprises and community members are avoided or minimized and resolved within communities when they occur
• Agriculture/horticulture/natural resource enterprises are viewed as contributing and positive elements in the community
• Communities actively manage their environments protecting and enhancing financial, infrastructure, human, environmental, and social capitals
• Youth are community leaders making decisions and taking action on issues of public/community concern that impact their lives
• Retirees develop leadership capacity to engage in the application of science-based solutions to environmental problems at the community level.
• Individuals experience improved environmental health, quality of life, and a sense of community
• Communities experience high quality of life, social cohesion, ecological integrity, effective decision making, and new economic opportunities
• Diversified local economies

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
2012	440.0	0.0	7.0	0.0
2013	440.0	0.0	7.0	0.0
2014	440.0	0.0	7.0	0.0
2015	440.0	0.0	7.0	0.0
2016	440.0	0.0	7.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Youth

This is a comprehensive, statewide educational program entailing a wide variety of applied research and multiple education methods depending on local context and need. Campus-based faculty and extension associates, program work teams, the NYSACCE4-HE professional development committee and county-based educators all are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

A variety of educational strategies will be used to help county educators and volunteers gain the skills and knowledge necessary to fully understand and differentiate between the range of possibilities that exist within initiatives. Trained 4-H Staff, teachers, community agency staff, volunteers, and teens lead youth in 4-H projects, which are a planned series of learning experiences through which youth develop

knowledge, practical skills (woodworking, gardening, cooking, etc.) and life skills (decision-making, self-discipline, leadership, etc.) in a variety of settings including after school programming and school enrichment activities.

Family

This is a comprehensive, statewide educational program entailing multiple education methods depending on local context and need. Campus-based faculty and extension associates and county-based educators are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

Community

CCE, CUAES and NYSAES have a commitment to the people of New York to build self-capacity among citizens so they can solve problems, improve quality of life, and build strong and vibrant communities. Through integrated research and extension agendas, we can help develop effective and collaborative land use/natural resource management approaches and policies that enhance economic, environmental and social connections. Program staff work with a variety of state and local groups to tackle projects that that vary in nature from applied research to pilot projects or case studies. These activities, which are demand driven (locally or regionally initiated usually with sponsored or self-financing), provide valuable insights, resources and materials for extension education.

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	☐ Billboards
☑ Group Discussion	☑ Newsletters
☑ One-on-One Intervention	☑ TV Media Programs
☑ Demonstrations	☑ Web sites
☐ Other 1	☐ Other 1
☐ Other 2	☐ Other 2

3. Description of targeted audience

Youth

- Young people
- Youth development educators and workers
- Youth development volunteers
- Parents and guardians
- Youth serving organizations
- Teachers and schools
- Community leaders

Family

- Parents, grandparents and other caregivers
- Child care providers
- Community stakeholders such as employers, leaders and policy makers at the local and state levels
- Low and moderate-income households who are especially vulnerable to financial setbacks and have less disposable income to commit to savings
- Low-income households living in poor-quality housing

Community

- Elected officials, community leaders, business leaders, not-for-profit agencies, youth serving agencies, schools, environmental groups, agribusiness leaders, etc.
- Retirees and other elders who have time to engage in community stewardship
- Engaged community citizens
- Communities as whole: youth and adults organizations, businesses, schools, and other institutions
- Agriculture/horticulture/natural resource enterprise managers, community residents and visitors, youth, local media, local officials, and local planning and economic development staff.
- Youth and youth serving organizations and adult volunteers who work with youth

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2012	200000	3500000	300000	750000
2013	200000	3500000	300000	750000
2014	200000	3500000	300000	750000
2015	200000	3500000	300000	750000
2016	200000	3500000	300000	750000

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

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2012	215	100	315
2013	215	100	315
2014	215	100	315

Year	Research Target	Extension Target	Total
2015	215	100	315
2016	215	100	315

V(H). State Defined Outputs

1. Output Target

- (6.1a) # of youth program educators and adult volunteers participating in programs on positive youth development.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.1b) # of youth participating in projects related to vocational skills and/or citizenship.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.2a) # of 4-H members enrolled in Science and Technology project areas.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.2b) # of youth reached through school enrichment and special interest programs, 4-H camp, and after school programs coded as science and technology related.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.2c) # of 4-H and other youth program educators and adult volunteers participating in programs on SET for youth.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.3a) # of infant and child care-givers completing non-formal education programs about quality dependent care giving.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.3b) # of persons with care-requiring dependents completing non-formal education programs on selection of care-giving individuals and facilities.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.4a) # of organizations, agencies, and institutions participating in non-formal educational programs about social and public policy issues to enhance opportunities for safe, economical, and developmentally appropriate care-giving programs for infants, children and youth.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.5a) # of persons completing complete non-formal education programs about parenting.
  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.6a) # of persons completing education programs on age-appropriate topics like spending and saving concepts, appropriate use of money, financial goals, tracking expenses, budgeting, credit management, financial planning, and/or wealth generation strategies.

  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.7a) # of consumers and property managers completing programs on indoor air quality issues.

  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.8a) # of residents, community leaders, entrepreneurs, economic development professionals participating in programs re: workforce, entrepreneurial climate, diversification, economic impact analysis, e-commerce, market development, business planning, partnerships.

  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.9a) # of community members participating in educational programs related to community decision-making, public participation, planning and monitoring processes, and collaborative approaches.

  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.10a) # of economic developers and/or entrepreneurs participating in educational programs on "green" business opportunities.

  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.11a) # of residents and community leaders participating in programs on community sustainability, community assets, citizen involvement, property rights, land use, conservation, interaction between environmental, economic, and quality of life issues.

  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.12a) # of agriculture/horticulture/natural resource business persons participating in education programs on potential environmental, health, social, and cultural impacts of their operations from the perspective of the community.

  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.13a) # of community members and/or local leaders participating in education programs on the roles of agriculture/horticulture/ natural resource enterprises in the local community, tax base, and environment.

  2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.13b) # of local community members and/or leaders participating in programs on the potential benefits of community-based agriculture and opportunities for promoting same.

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.15a) # of youth participating in education programs leading to youth community action initiatives.

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.15b) # of youth participating in train-the-trainer programs related to youth community action.

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.15c) # of adults participating train-the-trainer programs related to youth community action.

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.15d) # of communities participating in youth community action initiatives.

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.14a) # of hours of instruction by Master Gardener volunteers in educational programs for youth and adult audiences.

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- (6.14b) # of hours by Master Gardener volunteers in general program support.

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

V(I). State Defined Outcome

O. No	Outcome Name
1	(6.1c) # of youth participants who demonstrate gains in vocational/citizenship skills - knowledge, attitudes, and/or behaviors.
2	(6.1d) # of youth participants who learn to set goals, make plans and identify resources to achieve goals.
3	(6.1e) # of youth program educators and adult volunteers who demonstrate knowledge and/or skill gains in meeting the needs of youth at various stages of development.
4	(6.1f) # of youth participants who demonstrate ability to express their ideas confidently and competently.
5	(6.1g) # of adult volunteers documented to mentor and advise youth and other adult volunteers in an effective and positive manner.
6	(6.1h) # of youth participants documented as serving in age-appropriate leadership roles.
7	(6.1i) # of youth organizations/programs documented as reflecting youth needs, interests, and excitement for learning.

8	(6.2d) # participants demonstrating increased awareness of SET, improved SET skills including scientific methods, knowledge of specific sciences, and/or increased awareness of opportunities to contribute to society using SET skills.
9	(6.2e) # of participants that report improved success in school science and/or increased interest in science and technology.
10	(6.2f) # youth applying SET learning to contexts outside 4-H programs, e.g., school classes, science fairs, invention contests, etc.
11	(6.2g) # youth expressing interest/demonstrating aspirations towards SET careers, e.g., career fairs, job shadowing, volunteer work or internships
12	(6.2h) # youth adopting and using new scientific methods or improved technology.
13	(6.2i) # of youth and adult volunteers documented to become contributing participants in sci/tech related issues in their communities and/or choose sci/tech related professions and who attribute same at least in part to involvement with the program.
14	(6.2j) Increased number and more diverse pool of youth pursuing education and careers in SET related fields.
15	(6.2k) Increased and more diverse pool of trained teachers, educators, scientists.
16	(6.3c) # of participating infant and child caregivers who demonstrate knowledge or skill gains related care-giving practices.
17	(6.3d) # of participating persons with care-requiring dependents who demonstrate ability to evaluate the quality of care programs
18	(6.3e) # of participating infant and child caregivers reporting to have applied positive care-giving practices.
19	(6.3f) # participating persons with care-requiring dependents reporting to have used child care quality characteristics in their care selection.
20	(6.3g) # participating persons with care-requiring dependents reporting positive change in child care as a result of participating in educational programs.
21	(6.4b) # of program participants who demonstrate knowledge or skills gains regarding community approaches to family care.
22	(6.4c) # of program participants reporting to have been involved in community level assessments of family care needs.
23	(6.4d) # of communities documented to have taken action to address family needs that can be related to educational programs and/or critical community collaborations provided.
24	(6.5b) # parents, grandparents and other adults providing parental care gaining who demonstrate knowledge or skills gains regarding developmentally appropriate and effective parenting methods.
25	(6.5c) # parents and other adults providing parental care adopting development-ally appropriate and effective parenting methods.
26	(6.5d) # parents/relative caregivers reporting to have experienced positive change in parent-child relationships and child nurturance that they attribute to implementing new parenting behaviors learned in educational programs.
27	(6.6b) # participants who demonstrate knowledge or skill gains and/or can articulate specific actions they will take related to spending and saving concepts, appropriate use of money, setting financial goals, tracking expenses, budgeting, credit management, financial planning, and/or wealth generation strategies.
28	(6.6c) # of program participants reporting they are practicing improved money management skills such as comparison shopping, paying bills on time, paying more than minimum payment, checking credit report, and reviewing and understanding bills/statements as a means to meeting financial goals.
29	(6.6d) # of program participants reporting to have met day-to-day financial obligations while also progressing on future goals for homeownership, savings, retirement accounts, etc.
30	(6.6e) # of program participants reporting to have reduced debts and/or increased savings.
31	(6.7b) # of consumers and property managers gaining awareness and knowledge of indoor air quality issues and remediation options.
32	(6.7c) # of program participants documented to have taken measures to prevent or remediate indoor air quality issues.
33	(6.7d) # of program participants documented to have reduced short-term health effects of indoor air pollutants (such as irritation of the eyes, nose, and throat, headaches, dizziness, and fatigue) as a result of participating in educational programs.

34	(6.7e) # of participants reducing risks of respiratory diseases, heart disease, and cancer by implement measures such as radon remediation, controlling indoor triggers of asthma: secondhand smoke, dust mites, pet dander, and pests.
35	(6.8b) # of residents, community leaders, entrepreneurs, economic development professionals demonstrating knowledge/ skill gains re: workforce, entrepreneurial climate, diversification, economic impact analysis, e-commerce, market development, business planning, partnerships.
36	6.8c) # of residents and/or community leaders, demonstrating knowledge/skill gains about enhancing facilities and/or other community resources or services.
37	(6.8d) # of communities who plan for and implement initiatives on community based agricultural economic development, workforce development, business and entrepreneurial development and assistance, non-profit sector development and/or other elements of sustainable growth.
38	(6.8e) # of residents and/or community leaders, who plan for and initiate steps to enhance facilities, and/or other community resources or services.
39	(6.8f) # of communities establishing an infrastructure and climate to support entrepreneurs, local farms and agribusinesses attributable at least in part to initiatives of the program.
40	(6.8g) # of communities documenting improvements in facilities and/or other community resources or services.
41	(6.9b) # of community members demonstrating knowledge or skills gains related to community decision-making, public participation, planning and monitoring processes, collaborative approaches, and/or emergency preparedness.
42	(6.9c) # of communities instituting new or enhanced participatory processes related to economic development.
43	(6.9d) # of collaborative partnerships established within and across communities for issue resolution and collective action and/or to improve community services.
44	(6.9e) # of documented instances in which a community effectively resolves a need or strengthens community assets attributable at least in part to participation in the program.
45	(6.9f) # of communities reporting specific improvements in quality or scope of community services.
46	(6.10b) # of workforce professionals, economic developers and/or entrepreneurs demonstrating knowledge gains related to "green" workforce and business opportunities.
47	(6.10c) # of new workers trained and "green" businesses established at least in part due to participation in the program.
48	(6.10d) # of communities that report increased diversification of their local economies attributable at least in part to participation in the program.
49	(6.11b) # of residents and/or community leaders demonstrating knowledge or skill gains related to community sustainability, community assets, property rights, land use, environmental conservation, interaction between environmental, economic issues, quality of life indicators.
50	(6.11c) # of community leaders documented to apply community economic development and quality of life indicators to support decision-making.
51	(6.11d) # of communities implementing projects that enhance community sustainability and/or protect public health and community well being through sound environmental management.
52	(6.12b) # of agriculture/horticulture/natural resource business persons demonstrating knowledge or skill gains related to potential environmental, health, social, and cultural impacts of their operations from the perspective of the community.
53	(6.12c) # of instances in which producers/ horticulture businesses/ natural resource enterprises, residents and community leaders work together to address issues.
54	(6.12d) # documented instances in which agriculture/community conflicts are resolved locally.
55	(6.13c) # of community members and/or local leaders demonstrating knowledge or skill gains related to the roles of agriculture/horticulture/ natural resource enterprises in the local community, tax base, and environment and how they are affected by local policy.
56	(6.13e) # of communities that assess how current policies and infrastructures sustain or impede agriculture/ horticulture/natural resource enterprises (such as farmland protection or including such enterprises in economic development planning) and how the enterprises are affected by public policy.
57	(6.13f) # of communities that initiate specific plans to address agriculture/ horticulture/ natural resource enterprise related issues or capitalize on new opportunities including community agriculture initiatives.
58	(6.13g) # communities documented to adopt, maintain, or expand policies supportive of appropriate agriculture/horticulture/ natural resource enterprise development and/or community agriculture.

59	(6.15e) # of youth and adults demonstrating knowledge gains related to Youth/Adult Partnerships and Youth Community Action Initiatives.
60	(6.15f) # of youth documented to have practiced life skills necessary to meet challenges of adolescence and adulthood in authentic decision-making partnerships with adults as a result of participating in the program.
61	(6.15g) # of adults documented to have applied knowledge, skills and abilities and behaviors necessary as they assist youth developing into productive community members as a result of participating in the program.
62	(6.15h) # of documented instances in which youth and adults partner to improve quality of life within a community as a result of participating in the program.
63	(6.14c) # of community residents gaining knowledge and skill in weighing the environmental impacts and consequences of management actions taken in residential landscapes and homes.
64	(6.14d) # of community residents enhancing knowledge and skill in using research-based information to make plant and management choices among alternatives.
65	(6.14e) # of community residents gaining knowledge and skill in choosing and growing food crops for home, school and community gardens.
66	(6.14f) # of community residents practicing management tactics in residential landscapes and homes that work to sustain or enhance a healthy community and environment.
67	(6.14g) # of community residents with improved availability and access to fresh fruits and vegetables.
68	(6.14h) # of community education/demonstration food gardens established or maintained.
69	(6.13d) number of youth demonstrating knowledge or skill gains related to the agriculture and food system and/or natural resource enterprises

Outcome # 1

1. Outcome Target

(6.1c) # of youth participants who demonstrate gains in vocational/citizenship skills - knowledge, attitudes, and/or behaviors.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial

- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 2

1. Outcome Target

(6.1d) # of youth participants who learn to set goals, make plans and identify resources to achieve goals.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
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- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 3

1. Outcome Target

(6.1e) # of youth program educators and adult volunteers who demonstrate knowledge and/or skill gains in meeting the needs of youth at various stages of development.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
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- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 4

1. Outcome Target

(6.1f) # of youth participants who demonstrate ability to express their ideas confidently and competently.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:20000 **2013:**20000 **2014:**20000 **2015:**20000 **2016:**20000

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 5

1. Outcome Target

(6.1g) # of adult volunteers documented to mentor and advise youth and other adult volunteers in an effective and positive manner.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:7500 **2013:**7500 **2014:**7500 **2015:**7500 **2016:**7500

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
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- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 6

1. Outcome Target

(6.1h) # of youth participants documented as serving in age-appropriate leadership roles.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:3500 **2013:**3500 **2014:**3500 **2015:**3500 **2016:**3500

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being

- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 7

1. Outcome Target

(6.1i) # of youth organizations/programs documented as reflecting youth needs, interests, and excitement for learning.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:750	**2013:**750	**2014:**750	**2015:**750	**2016:**750

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
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- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 8

1. Outcome Target

(6.2d) # participants demonstrating increased awareness of SET, improved SET skills including scientific methods, knowledge of specific sciences, and/or increased awareness of opportunities to contribute to society using SET skills.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:15000 **2013:**15000 **2014:**15000 **2015:**15000 **2016:**15000

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
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- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 9

1. Outcome Target

(6.2e) # of participants that report improved success in school science and/or increased interest in science and technology.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:7500 **2013:**7500 **2014:**7500 **2015:**7500 **2016:**7500

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
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- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 10

1. Outcome Target

(6.2f) # youth applying SET learning to contexts outside 4-H programs, e.g., school classes, science fairs, invention contests, etc.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:7500 **2013:**7500 **2014:**7500 **2015:**7500 **2016:**7500

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
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- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 11

1. Outcome Target

(6.2g) # youth expressing interest/demonstrating aspirations towards SET careers, e.g., career fairs, job shadowing, volunteer work or internships

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:2000 **2013:**2000 **2014:**2000 **2015:**2000 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being

- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 12

1. Outcome Target

(6.2h) # youth adopting and using new scientific methods or improved technology.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:2000 **2013:**2000 **2014:**2000 **2015:**2000 **2016:**2000

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
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- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 13

1. Outcome Target

(6.2i) # of youth and adult volunteers documented to become contributing participants in sci/tech related issues in their communities and/or choose sci/tech related professions and who attribute same at least in part to involvement with the program.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
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- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 14

1. Outcome Target

(6.2j) Increased number and more diverse pool of youth pursuing education and careers in SET related fields.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
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- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 15

1. Outcome Target

(6.2k) Increased and more diverse pool of trained teachers, educators, scientists.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 16

1. Outcome Target

(6.3c) # of participating infant and child caregivers who demonstrate knowledge or skill gains related care-giving practices.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☑ 802 - Human Development and Family Well-Being

- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 17

1. Outcome Target

(6.3d) # of participating persons with care-requiring dependents who demonstrate ability to evaluate the quality of care programs

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
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- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 18

1. Outcome Target

(6.3e) # of participating infant and child caregivers reporting to have applied positive care-giving practices.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:1000 **2013:**1000 **2014:**1000 **2015:**1000 **2016:**1000

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
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- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 19

1. Outcome Target

(6.3f) # participating persons with care-requiring dependents reporting to have used child care quality characteristics in their care selection.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:1000 **2013:**1000 **2014:**1000 **2015:**1000 **2016:**1000

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
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- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 20

1. Outcome Target

(6.3g) # participating persons with care-requiring dependents reporting positive change in child care as a result of participating in educational programs.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:2000 **2013:**2000 **2014:**2000 **2015:**2000 **2016:**2000

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
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- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 21

1. Outcome Target

(6.4b) # of program participants who demonstrate knowledge or skills gains regarding community approaches to family care.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☑ 802 - Human Development and Family Well-Being

- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 22

1. Outcome Target

(6.4c) # of program participants reporting to have been involved in community level assessments of family care needs.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:500	**2013:**500	**2014:**500	**2015:**500	**2016:**500

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☑ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 23

1. Outcome Target

(6.4d) # of communities documented to have taken action to address family needs that can be related to educational programs and/or critical community collaborations provided.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:150 **2013:**150 **2014:**150 **2015:**150 **2016:**150

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☑ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 24

1. Outcome Target

(6.5b) # parents, grandparents and other adults providing parental care gaining who demonstrate knowledge or skills gains regarding developmentally appropriate and effective parenting methods.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☑ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 25

1. Outcome Target

(6.5c) # parents and other adults providing parental care adopting development-ally appropriate and effective parenting methods.

2. Outcome Type :

- ( ) Change in Knowledge Outcome Measure
- (●) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:6500 **2013:**6500 **2014:**6500 **2015:**6500 **2016:**6500

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☑ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 26

1. Outcome Target

(6.5d) # parents/relative caregivers reporting to have experienced positive change in parent-child relationships and child nurturance that they attribute to implementing new parenting behaviors learned in educational programs.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:5000 **2013:**5000 **2014:**5000 **2015:**5000 **2016:**5000

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management

- ☑ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 27

1. Outcome Target

(6.6b) # participants who demonstrate knowledge or skill gains and/or can articulate specific actions they will take related to spending and saving concepts, appropriate use of money, setting financial goals, tracking expenses, budgeting, credit management, financial planning, and/or wealth generation strategies.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☑ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☑ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 28

1. Outcome Target

(6.6c) # of program participants reporting they are practicing improved money management skills such as comparison shopping, paying bills on time, paying more than minimum payment, checking credit report, and reviewing and understanding bills/statements as a means to meeting financial goals.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:4000 **2013:**4000 **2014:**4000 **2015:**4000 **2016:**4000

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☑ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☑ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 29

1. Outcome Target

(6.6d) # of program participants reporting to have met day-to-day financial obligations while also progressing on future goals for homeownership, savings, retirement accounts, etc.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:2000 **2013:**2000 **2014:**2000 **2015:**2000 **2016:**2000

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☑ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☑ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 30

1. Outcome Target

(6.6e) # of program participants reporting to have reduced debts and/or increased savings.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:2250 **2013:**2250 **2014:**2250 **2015:**2250 **2016:**2250

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☑ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☑ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 31

1. Outcome Target

(6.7b) # of consumers and property managers gaining awareness and knowledge of indoor air quality issues and remediation options.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☑ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☑ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☑ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 32

1. Outcome Target

(6.7c) # of program participants documented to have taken measures to prevent or remediate indoor air quality issues.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:750	**2013:**750	**2014:**750	**2015:**750	**2016:**750

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☑ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being

- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☑ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 33

1. Outcome Target

(6.7d) # of program participants documented to have reduced short-term health effects of indoor air pollutants (such as irritation of the eyes, nose, and throat, headaches, dizziness, and fatigue) as a result of participating in educational programs.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0	**2013:**0	**2014:**0	**2015:**0	**2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☑ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- [x] 1862 Extension
- [x] 1862 Research

Outcome # 34

1. Outcome Target

(6.7e) # of participants reducing risks of respiratory diseases, heart disease, and cancer by implement measures such as radon remediation, controlling indoor triggers of asthma: secondhand smoke, dust mites, pet dander, and pests.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- [ ] 131 - Alternative Uses of Land
- [ ] 134 - Outdoor Recreation
- [ ] 511 - New and Improved Non-Food Products and Processes
- [ ] 607 - Consumer Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 609 - Economic Theory and Methods
- [ ] 610 - Domestic Policy Analysis
- [ ] 801 - Individual and Family Resource Management
- [ ] 802 - Human Development and Family Well-Being
- [ ] 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- [x] 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- [ ] 805 - Community Institutions, Health, and Social Services
- [ ] 806 - Youth Development

4. Associated Institute Type(s)

- [x] 1862 Extension
- [x] 1862 Research

Outcome # 35

1. Outcome Target

(6.8b) # of residents, community leaders, entrepreneurs, economic development professionals demonstrating knowledge/ skill gains re: workforce, entrepreneurial climate, diversification, economic impact analysis, e-commerce, market development, business planning, partnerships.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 36

1. Outcome Target

6.8c) # of residents and/or community leaders, demonstrating knowledge/skill gains about enhancing facilities and/or other community resources or services.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 37

1. Outcome Target

(6.8d) # of communities who plan for and implement initiatives on community based agricultural economic development, workforce development, business and entrepreneurial development and assistance, non-profit sector development and/or other elements of sustainable growth.

2. Outcome Type :

- ( ) Change in Knowledge Outcome Measure
- (●) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:150 **2013:**150 **2014:**150 **2015:**150 **2016:**150

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 38

1. Outcome Target

(6.8e) # of residents and/or community leaders, who plan for and initiate steps to enhance facilities, and/or other community resources or services.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:150 **2013:**150 **2014:**150 **2015:**150 **2016:**150

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis

- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 39

1. Outcome Target

(6.8f) # of communities establishing an infrastructure and climate to support entrepreneurs, local farms and agribusinesses attributable at least in part to initiatives of the program.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:15 **2013:**15 **2014:**15 **2015:**15 **2016:**15

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 40

1. Outcome Target

(6.8g) # of communities documenting improvements in facilities and/or other community resources or services.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:35	**2013:**35	**2014:**35	**2015:**35	**2016:**35

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 41

1. Outcome Target

(6.9b) # of community members demonstrating knowledge or skills gains related to community

decision-making, public participation, planning and monitoring processes, collaborative approaches, and/or emergency preparedness.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 42

1. Outcome Target

(6.9c) # of communities instituting new or enhanced participatory processes related to economic development.

2. Outcome Type :

- ( ) Change in Knowledge Outcome Measure
- (●) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:75 **2013:**75 **2014:**75 **2015:**75 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 43

1. Outcome Target

(6.9d) # of collaborative partnerships established within and across communities for issue resolution and collective action and/or to improve community services.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis

- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 44

1. Outcome Target

(6.9e) # of documented instances in which a community effectively resolves a need or strengthens community assets attributable at least in part to participation in the program.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:35 **2013:**35 **2014:**35 **2015:**35 **2016:**35

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 45

1. Outcome Target

(6.9f) # of communities reporting specific improvements in quality or scope of community services.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0	**2013:**0	**2014:**0	**2015:**0	**2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 46

1. Outcome Target

(6.10b) # of workforce professionals, economic developers and/or entrepreneurs demonstrating

knowledge gains related to "green" workforce and business opportunities.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 47

1. Outcome Target

(6.10c) # of new workers trained and "green" businesses established at least in part due to participation in the program.

2. Outcome Type :

- ( ) Change in Knowledge Outcome Measure
- (●) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 48

1. Outcome Target

(6.10d) # of communities that report increased diversification of their local economies attributable at least in part to participation in the program.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis

- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 49

1. Outcome Target

(6.11b) # of residents and/or community leaders demonstrating knowledge or skill gains related to community sustainability, community assets, property rights, land use, environmental conservation, interaction between environmental, economic issues, quality of life indicators.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 131 - Alternative Uses of Land
- ☑ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 50

1. Outcome Target

(6.11c) # of community leaders documented to apply community economic development and quality of life indicators to support decision-making.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:100	**2013:**100	**2014:**100	**2015:**100	**2016:**100

3. Associated Knowledge Area(s)

- ☑ 131 - Alternative Uses of Land
- ☑ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 51

1. Outcome Target

(6.11d) # of communities implementing projects that enhance community sustainability and/or protect

public health and community well being through sound environmental management.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:25 **2013:**25 **2014:**25 **2015:**25 **2016:**25

3. Associated Knowledge Area(s)

- ☑ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 52

1. Outcome Target

(6.12b) # of agriculture/horticulture/natural resource business persons demonstrating knowledge or skill gains related to potential environmental, health, social, and cultural impacts of their operations from the perspective of the community.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 53

1. Outcome Target

(6.12c) # of instances in which producers/ horticulture businesses/ natural resource enterprises, residents and community leaders work together to address issues.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:75 **2013:**75 **2014:**75 **2015:**75 **2016:**75

3. Associated Knowledge Area(s)

- ☑ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis

- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 54

1. Outcome Target

(6.12d) # documented instances in which agriculture/community conflicts are resolved locally.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:50 **2013:**50 **2014:**50 **2015:**50 **2016:**50

3. Associated Knowledge Area(s)

- ☑ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 55

1. Outcome Target

(6.13c) # of community members and/or local leaders demonstrating knowledge or skill gains related to the roles of agriculture/horticulture/ natural resource enterprises in the local community, tax base, and environment and how they are affected by local policy.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 56

1. Outcome Target

(6.13e) # of communities that assess how current policies and infrastructures sustain or impede agriculture/ horticulture/natural resource enterprises (such as farmland protection or including such enterprises in economic development planning) and how the enterprises are affected by public policy.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:150 **2013:**150 **2014:**150 **2015:**150 **2016:**150

3. Associated Knowledge Area(s)

- ☑ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 57

1. Outcome Target

(6.13f) # of communities that initiate specific plans to address agriculture/ horticulture/ natural resource enterprise related issues or capitalize on new opportunities including community agriculture initiatives.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:75 **2013:**75 **2014:**75 **2015:**75 **2016:**75

3. Associated Knowledge Area(s)

- ☑ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☑ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 58

1. Outcome Target

(6.13g) # communities documented to adopt, maintain, or expand policies supportive of appropriate agriculture/horticulture/ natural resource enterprise development and/or community agriculture.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:50 **2013:**50 **2014:**50 **2015:**50 **2016:**50

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 59

1. Outcome Target

(6.15e) # of youth and adults demonstrating knowledge gains related to Youth/Adult Partnerships and Youth Community Action Initiatives.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being

- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 60

1. Outcome Target

(6.15f) # of youth documented to have practiced life skills necessary to meet challenges of adolescence and adulthood in authentic decision-making partnerships with adults as a result of participating in the program.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:6500 **2013:**6500 **2014:**6500 **2015:**6500 **2016:**6500

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 61

1. Outcome Target

(6.15g) # of adults documented to have applied knowledge, skills and abilities and behaviors necessary as they assist youth developing into productive community members as a result of participating in the program.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:1250 **2013:**1250 **2014:**1250 **2015:**1250 **2016:**1250

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 62

1. Outcome Target

(6.15h) # of documented instances in which youth and adults partner to improve quality of life within a community as a result of participating in the program.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ◉ Change in Condition Outcome Measure

2012:750 **2013:**750 **2014:**750 **2015:**750 **2016:**750

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 1862 Research

Outcome # 63

1. Outcome Target

(6.14c) # of community residents gaining knowledge and skill in weighing the environmental impacts and consequences of management actions taken in residential landscapes and homes.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 131 - Alternative Uses of Land
- ☑ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☑ 801 - Individual and Family Resource Management
- ☑ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☐ 1862 Research

Outcome # 64

1. Outcome Target

(6.14d) # of community residents enhancing knowledge and skill in using research-based information to make plant and management choices among alternatives.

2. Outcome Type :

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☑ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☐ 1862 Research

Outcome # 65

1. Outcome Target

(6.14e) # of community residents gaining knowledge and skill in choosing and growing food crops for home, school and community gardens.

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☑ 801 - Individual and Family Resource Management
- ☑ 802 - Human Development and Family Well-Being

- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☐ 1862 Research

Outcome # 66

1. Outcome Target

(6.14f) # of community residents practicing management tactics in residential landscapes and homes that work to sustain or enhance a healthy community and environment.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0	**2013:**0	**2014:**0	**2015:**0	**2016:**0

3. Associated Knowledge Area(s)

- ☑ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☑ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☑ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☐ 1862 Research

Outcome # 67

1. Outcome Target

(6.14g) # of community residents with improved availability and access to fresh fruits and vegetables.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☐ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☑ 801 - Individual and Family Resource Management
- ☑ 802 - Human Development and Family Well-Being
- ☑ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☐ 1862 Research

Outcome # 68

1. Outcome Target

(6.14h) # of community education/demonstration food gardens established or maintained.

2. Outcome Type :

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☑ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☐ 1862 Research

Outcome # 69

1. Outcome Target

(6.13d) number of youth demonstrating knowledge or skill gains related to the agriculture and food system and/or natural resource enterprises

2. Outcome Type :

- ◉ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

2012:0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

3. Associated Knowledge Area(s)

- ☑ 131 - Alternative Uses of Land
- ☐ 134 - Outdoor Recreation
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 607 - Consumer Economics
- ☑ 608 - Community Resource Planning and Development
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 801 - Individual and Family Resource Management
- ☐ 802 - Human Development and Family Well-Being
- ☐ 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- ☐ 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

4. Associated Institute Type(s)

- ☑ 1862 Extension
- ☑ 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.)
- ☐ Other

Description

Youth Fiscal pressures internal to Extension and among community organizations influence the scope and quality of programming available to youth. Increasing diversity of our populations creates need for a broader array of program materials, strategies and for a focus on multicultural competencies. Changing educational standards influence acceptability of existing curricula. Regional demographic differences and differences across communities influence both needs and program strategy.

Family The economic, political and governmental sectors affect the quality, availability and accessibility of infant and child care. The growth of aging and minority populations in the US means

more diverse cultures and values related to parenting, child care, and family care giving. Natural disasters and the economy affect household financial status and impact energy issues. They also affect the quality of the indoor air environment. Government regulation and policies driven by public priorities can change the circumstances of personal finances, the energy market and the quality of the indoor household environment. Public and private funders and CCE may have fewer fiscal resources and other resources to devote to the quality of life in financial, human development, energy and indoor air quality matters.

Community Communities operate in a complex and volatile context involving susceptibility to weather extremes, changing governmental policies and regulations, land uses demands and shifting development patterns, evolving consumer demands, and globalization related economic factors. Weather related disasters can greatly impact communities in terms of infrastructure damage and direct costs. The global, statewide, and regional economies directly impact local economies. Fundamental change is occurring in the state and regional economies. The specific implications of these external factors vary greatly by locale and across regions.

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

Description

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation "system" rather than as bounded "studies" or investigations. Because each of the plans addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

In 2009-2010, we embarked on a targeted effort to assess youth science, engineering and technology education. In collaboration with the Cornell Office for Research on Evaluation, 19 county extension programs developed comprehensive evaluation plans and are proceeding with implementation in the current year.

The Parenting In Context CCE statewide program is implementing an online Data Collection System for program evaluation. A program work team of faculty, associates and extension professionals

developed, piloted and revised a pre-and post survey and launched it for statewide use beginning in April 2009. The survey can be administered within a variety of CCE parenting education programs with at least 6 hours of instruction.

2. Data Collection Methods

- ☑ Sampling
- ☑ Whole population

Survey (Mail, Telephone, On-Site).

- ☑ Mail
- ☑ Telephone
- ☑ On-Site

Interview

- ☑ Structured
- ☑ Unstructured

- ☑ Case Study
- ☑ Observation
- ☑ Portfolio Reviews
- ☐ Tests
- ☑ Journals
- ☐ Other

Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected "success stories."