

# 2015 Cornell University Research and Extension and NY State Agricultural Experiment Station Research Combined Annual Report of Accomplishments and Results

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## I. Report Overview

### 1. Executive Summary

#### CORNELL UNIVERSITY EXECUTIVE SUMMARY

At Cornell University, Federal Capacity Funds are administered strategically to address a wide range of issues in the state and foster integration of applied research and extension programming.

Cornell University Agricultural Experiment Station (CUAES), the New York State Agricultural Experiment Station (NYSAES), and Cornell Cooperative Extension (CCE) work collaboratively to determine planned programs that align with NIFA priority areas and direct funds to research and extension projects as well as those that integrate research and extension. The approach used to integrate the work of the experiment stations and CCE is designed to serve the citizens of New York State and improve the human condition through excellence in scholarship; linking research, non-formal teaching and extension to "real life" challenges and opportunities. Director-level staff from CUAES, NYSAES, and CCE meet regularly as an Integrated Program and Research Team (IPaRT) to discuss relevant issues, research and extension projects and new opportunities.

IPaRT recruits and communicates with a group of richly diverse research and extension stakeholders, who provide input and inform priority-setting for use of Federal Capacity Funds. These stakeholders review proposals submitted through an internal competitive process by which faculty may apply for federal capacity funds for projects with research and extension components matching current priorities. In addition, we have 33 active Program Work Teams comprised of extension educators, faculty, and stakeholders from across New York State who work together to develop, implement, and evaluate priority programs.

University-wide strategic plans have reinforced the land grant research and extension mission. In 2014 the College of Agriculture and Life Sciences (CALS) released the CALS Strategic Plan: Knowledge with Public Purpose in a Changing World. The CALS plan supports engaged learning and research that includes additional support for student internships and externships, faculty and staff participation in outreach through media, connections for research and extension to policy and regulatory actions and support for regional extension teams that build upon existing university and extension capacity. Likewise, the College of Human Ecology (CHE) is continuing to reinforce the bridges between science and practice, campus community partnerships, and leadership and outreach. The CHE Bronfenbrenner Center for Translational Research is dedicated to expanding, strengthening and accelerating the connections between research, policy, and practice to enhance human development and well-being. Both colleges along with the Industrial Labor Relations (ILR) School of Cornell University and the Cornell University College of Veterinary Medicine are committed to research, teaching and extension and the need to translate knowledge for public purpose.

This report documents the intentional planned program work that resulted from Federal Capacity Funds. Planned Programs were addressed collectively by CCE, CUAES, and NYSAES. Further detail, outcome indicators and success stories are included in the formal report.

Each organization is described below to better explain our unique system at Cornell University.

### **Cornell University Agricultural Experiment Station**

The Cornell University Agricultural Experiment Station links Cornell's world-class research facilities with one of the nation's most comprehensive statewide cooperative extension systems. Through this engaged, interactive system we address pressing issues that directly affect the health and welfare of the state and beyond. Many of today's most urgent societal concerns - from childhood obesity to invasive species to global climate change - are not bound by state or national boundaries.

With more than 130 years of experience identifying, quantifying, and responding to emerging issues in an ever-changing world, CUAES directs some of the most important projects in the state on a broad range of topics with six general themes: Global Food Security & Hunger; Youth, Family, & Community; Climate Change; Food Safety; Sustainable Energy; and Childhood Obesity.

The station also has influence over 12,000 acres of farms and forests, seven farm facilities and over 177,000 square feet of greenhouse space--providing critical research services to scientists. Our student-run farm, Dilmun Hill, which uses organic agricultural practices, is a model of a student-run agricultural operation that has been emulated by other organizations and universities. Every aspect of our operation - from staff development to forest management to farm management- is viewed through the lens of sustainability.

#### **The Cornell University Agricultural Experiment Station:**

- Manages more than \$7 million in federal Hatch and Hatch Multistate funds.
- Annually distributes approximately \$1.5 million to new competitively reviewed projects. Federal Capacity Funds are an essential element of Cornell's research portfolio, supporting applied research that benefits residents of the state, region, and the nation.
- Manages an operational budget that is approximately \$5 million and employs roughly 50 full time operations staff and nine full time staff in administration.
- Operates seven farms with agricultural production and forest acreage across the state, from Willsboro on Lake Champlain to Long Island on the Atlantic Seaboard.

### **New York State Agricultural Experiment Station**

Established in 1880, Cornell's New York State Agricultural Experiment Station (NYSAES) in Geneva has existed for more than 130 years developing cutting-edge technologies essential to feeding the world and strengthening New York economies. The focus of both research and extension programs at NYSAES is on the production, protection and processing of horticulture food crops, turf and hybrid willow for renewable energy. While our programs have traditionally addressed global food security and hunger issues, the

Experiment Station is also well positioned to address other challenges identified as high priorities by NIFA.

### **The New York State Agricultural Experiment Station:**

- Operates on a budget that is approximately \$35 million with \$9.1 million funded through SUNY's base budget.
- Employs 200 staff and 30 tenure-track professors.
- Partners with Faculty and Extension Associates: on the range of 10 visiting scientists, 20 postdocs, 25 research and extension associates.
  - Extends research and knowledge through students. In recent years there have been 40-45 graduate students conducting masters and doctoral studies.
  - Encourages cross departmental/Research Association operations: Our four departments -- horticulture; plant pathology and plant-microbe biology; entomology and food science - have faculty in Geneva and Ithaca. The main focus is on improving the genetics, cultivation, production, protection, handling and processing of fruit and vegetable crops.
  - Partners with the Northeast Center for Food Entrepreneurship (NECFE), at the NY Food Venture Center at Geneva to provide assistance to over 200 food entrepreneurs annually, promoting sustainable economic development in rural communities.

Campus includes:

- the U.S. Department of Agriculture's Plant Genetic Resources Unit (PGRU), responsible for the collection of apple, sour cherry and cold-hardy grapes and selected seed-propagated crops, such as onion, garlic, broccoli, cabbage and winter squash; and the Grape Genetics Resources Unit (GGRU), responsible for the national program on grape genetics and genomics.
  - A central Geneva campus made up of 20 major buildings, several smaller buildings for farm machinery storage and similar purposes, and 32 houses with rooms rented to graduate students, visiting scientists, and postdocs.
  - Two pilot plants -- the Fruit & Vegetable Processing Pilot Plant and the Vinification & Brewing Technology Laboratory -- provide opportunities for entrepreneurs and processors to add value to the state's raw products.
    - The NYS IPM Program
    - The NYS Seed Testing Laboratory
    - IR-4 Field Research Program
    - Cornell Agriculture and Food Technology Park adjacent to the main NYSAES campus
    - Administers other research/extension laboratories - Hudson Valley at Highland, NY, and the Cornell Lake Erie Research and Extension Laboratory at Portland, NY.
    - Operates eleven farms for experimental plot work close to the Geneva campus with a total of 870 acres. There is also one acre of glasshouse space on the campus.

### **Cornell Cooperative Extension**

Cornell Cooperative Extension extends Cornell University's land-grant programs to citizens all across New York State. With a presence in every county and New York City, CCE puts research into practice by providing high-value educational programs and university-backed resources that help solve real-life problems, transforming and improving New York families, farms, businesses and communities.

County associations of Cornell Cooperative Extension work with their local boards, committees and volunteers to influence decisions on program priorities and delivery. Our county extension associations and multi-county programs are separate 501(c) 3 organizations under the general supervision of Cornell

### **Cornell Cooperative Extension:**

- Annually reaches over 1.3 million directly, and 15 million indirectly.
- Employs 1,057 local and regional staff and educators organized around program initiatives and local needs including 55 regional specialists who focus on dairy and field crops, commercial horticulture, grapes/viticulture, fruit, and vegetables.
  - Extends community work by partnering with over 34,000 volunteers who advise, plan, teach and mentor in all program areas.
  - Partners with approximately 281 Cornell staff and faculty; primarily from the College of Agriculture and Life Sciences and the College of Human Ecology.
  - Engages a program development process that relies heavily on county input to identify issues of local importance. Often research is informed by the two-way flow of information and experience.
  - Includes 57 distance learning centers and 9 youth camps across New York State, and is fully equipped to deliver events and instruction through various modes including webinars and on-demand videos to remote audiences.

### **Collective, planned program areas are described below.**

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**AGRICULTURE AND FOOD SYSTEMS:** Support, maintain and develop a NY agriculture industry that is diverse, sustainable, and profitable, which produces a safe, reliable, healthy and local food supply.

**CLIMATE CHANGE:** Engage with multidisciplinary researchers, educators and extension faculty to quantify the current climate trends and prepare for future impacts. This plan also includes related topics - biodiversity and water quality/erosion control.

**ENVIRONMENT, NATURAL RESOURCES AND SUSTAINABLE ENERGY:** Engage in research and extension that uses available resources - including land and organic waste streams for renewable solutions. This plan also supports research and extension strategies that promote energy and natural resource conservation.

### **NUTRITION, FOOD SAFETY AND SECURITY, AND OBESITY PREVENTION:**

Support families, youth, communities and the agricultural industry with research and extension connected to childhood obesity prevention; youth, family and community nutrition; food security and food safety.

**4-H YOUTH DEVELOPMENT/CHILDREN, YOUTH, AND FAMILIES:** Enrich the lives of youth and families with research and extension programs. 4-H youth programs focus on life skill development and STEM opportunities. Family programs emphasize human development and social well-being, parenting, economic well-being, and quality of home and work environments.

**COMMUNITY AND ECONOMIC VITALITY:** Empower individuals and communities to make sound decisions for the future through access to research, data and resources, best practices, university-based resources and community education. This plan also supports extension efforts related to entrepreneurship and workforce development.

**Total Actual Amount of professional FTEs/SYs for this State**

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	1056.0	0.0	34.0	0.0
Actual	1058.0	0.0	40.0	0.0

**II. Merit Review Process**

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

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

**2. Brief Explanation**

CUAES, NYSAES and CCE use one integrated process of merit review for applied research and extension projects, including integrated and multistate activities. Key elements of the process are described below, and include statistics from the most current (2015) proposal cycle. Director-level staff from CAUES, NYSAES, and CCE meet regularly as an Integrated Program and Research Team (IPaRT) to discuss relevant issues, research and extension projects, and new opportunities.

**Submission and Review Process (Research, Extension, and Integrated Projects with Federal Capacity Funds):**

- 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 Capacity Funds.
- PI's who meet eligibility requirements are generally allowed to submit one pre-proposal within each funding stream (e.g. Smith Lever, Hatch, Hatch Multistate), and do so through a robust IT system, which tracks each proposal through its life cycle.
- Pre-proposals are reviewed for purpose and relevancy by external stakeholders, the principal investigator's department chair, Extension Program Associate/Assistant Directors, and the Agricultural Experiment Station directors (CUAES and NYSAES). Reviews are submitted via a secure website.

**For research proposals:**

- Agricultural Experiment Station directors make final determination of pre-proposals for development into full proposals.
- Full proposals are reviewed by two or three peer reviewers suggested by the PI and the PI's Department Chair.
- The final proposal is submitted to NIFA through REEPORT. Pending approval by NIFA, Hatch funds are allocated to a dedicated and unique account associated with their specific project.

**For extension proposals:**

- Extension Program Directors rank/recommend extension pre-proposals.
- Extension Program Directors meet with Agricultural Experiment Station (Ithaca and Geneva) staff to discuss potential research and extension linkages within extension pre-proposals.

- Extension Assistant Director, Organizational Development & Accountability reviews for equal program opportunity and affirmative action considerations.
- Extension Program Directors finalize Smith-Lever funding recommendations.

### **Cornell University Review Criteria:**

- Anticipated significance of results relative to current priority needs or opportunities
- Scientific merit of objectives
- Clarity of objectives
- Appropriate approach and methodology
- Feasibility of attaining objectives
- Accomplishment during previous projects
- Research performance and competence of investigator(s)
- Relevance of the proposed work to state, regional, or national goals
- Impact on underserved audiences
- Level of research-extension integration
- Relevance to stakeholders

For FY15, our most current data, a total of 110 pre-proposals were submitted to CUAES, NYSAES and CCE of which 79 were funded.

## **III. Stakeholder Input**

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

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

### **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, IPaRT has a single multidisciplinary external stakeholder group that provides guidance for CUAES, NYSAES and CCE by reviewing funding support requests. Membership is intentionally monitored and updated to ensure involvement and ties to traditional and non-traditional constituents, and established and emerging partnerships.

In addition, we have 33 active Program Work Teams (PWTs). PWTs are made up of extension educators, faculty, and stakeholders who work together to develop, implement and determine priority programs within PWTs and to advise IPaRT as needed. 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. More than 1000 participants were involved in the work of these teams in 2015.

Beyond this state-level stakeholder input structure/process, each of Cornell Cooperative Extension's county extension associations continue to work closely with local stakeholders via participation in their local governance structures, i.e. board of directors, and advisory committee structures. In 2015, more than 2,940 board and committee volunteers from diverse backgrounds participated and assisted in the direction, priority setting programs throughout the state, and over 34,000 committed volunteers assisted with program delivery adding to stakeholder involvement.

In local CCE offices stakeholder input is sought from all audiences including under-represented or under-served audiences. One of the strategies used for gaining input and developing working relationships with new audiences is by networking and partnering with organizations that do have existing and strong relationships with target groups. Local boards of directors and advisory committees also recruit an intentionally diverse membership representative of the people and the needs in the community.

Effective involvement of youth in program determination and implementation is a priority. Our local advisory committees are expected to include youth members as part of the needs assessment and decision making structure. In 2015, more than 11,000 youth reported serving in appropriate leadership, governance and program delivery roles statewide.

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

### **1. Method to identify individuals and groups**

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

#### **Brief explanation.**

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 expected to have active and diverse advisory processes and to intentionally consider audiences not currently served. Activities IPaRT stakeholders and PWTS are described in other questions in this section. Needs assessments, focus groups, and use surveys are conducted at the individual level of program units as well as in our

statewide plan of work process.

As a method of tracking program needs and input received, CCE educators are expected to submit narrative reports of efforts including efforts intentionally planned to engage underserved populations. For the 2015 reporting year, nearly 25% of the 400 + impact statements were submitted exemplifying programming intended for underserved audiences: 4-H programs reaching new audiences through after school programming and working with other organizations, food and nutrition programs helping mothers, families and food pantry clients to cook well balanced, affordable meals, parenting programs focusing on families in high stress situations, resiliency and hope building strategies for families everywhere. Full access to these examples can be found here: <http://staff.cce.cornell.edu/orgdev/Pages/Success-Stories.aspx>

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

### **1. Methods for collecting Stakeholder Input**

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

### **Brief explanation.**

All of the techniques listed were used in 2015 but methods varied site to site and program-to-program across the system. Structures and processes for aggregating data are addressed in this section. The most active data gathering occurred in three venues - local advisory bodies, PWTs, and the IPaRT stakeholders. Web based surveys; interactive webinars and response to social media also provide programmatic feedback. Examples used in the past year to gather stakeholder input include: Community Forum on Community Nutrition (CCE Rensselaer County), Albany Youth CAN CYFAR Project - teens considered ways to address needs that they identified in their communities (CCE Albany County), Hemlock Woolly Adelgid Community IPM - collaborative planning and implementation for long-term photo-monitoring of canopy changes and community education (CCE Onondaga County), Grow Local, Buy Local: Watertown City School District Farm to School - comprehensive planning initiative (CCE Jefferson County), Volunteer Recruitment Retention Efforts - strategic planning efforts (CCE St. Lawrence County), Reestablishing Hops in the North Country - working with stakeholders to identify need and niche (CCE Franklin County).

Preparing staff to understand how to meet the needs of stakeholders is a priority. Educators are offered training through webinars and recorded short videos that are part of program development coursework. Webinars were offered on: Needs Assessments, Developing a Local Plan of Work, and the reporting process. Recorded webinars and resources are available to meet on-demand

We continued statewide efforts to provide current resources for educators regarding equal program opportunity. In 2015 mandatory staff training on Title VI Civil Rights were held. Additionally, trainings driven by outcomes related to diversity and inclusion were offered to staff across the state via live webinars. Training topics included - Understanding and Using Socio-Economic Demographics, Diversity & Inclusion Among Advisory Members, Civil Rights Compliance Basics, and Unconscious Bias. These resources along with distance learning training in the program development process help staff learn the how to identify local needs and then meet the needs of audiences through programs.

### **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

#### **Brief explanation.**

The stakeholder input process for statewide program development jointly utilized by CUAES, NYSAES and CCE was established in February 2001.

IPaRT stakeholders and PWTs work to improve program focus, relevance, and planning activities. Stakeholder input informs federal capacity funding priorities and provides project-specific input on relevance and value of the proposed work. IPaRT stakeholders provide input that informs decisions around funding of current extension and research projects, contributing ratings of perceived relevance. Statewide applied research and extension priorities are updated annually, communicated to faculty and staff, and used as a consideration in funding decisions.

County associations of Cornell Cooperative Extension work with their local boards, committees and volunteers to influence decisions on program priorities and delivery. County extension associations and multi-county programs are separate 501(c) 3 organizations under the general supervision of Cornell University as agent for the state of New York. Their local plans of work are established under guidance of stakeholders in local advisory structures and governing boards and are in alignment with the statewide plan of work.

#### **Brief Explanation of what you learned from your Stakeholders**

Stakeholders help to frame and shape plans of work, funding proposals, programs, and educational activities. System wide the IPaRT stakeholders and PWTs have reaffirmed commitment to the NIFA priorities and have elevated needs and opportunities to make use of campus resources for educational programs. Feedback from stakeholders is sought in a variety of ways, welcomed and considered for planning. Communication between CUAES, NYSAES and CCE is open and regular at IPaRT meetings and through funding decisions.

#### IV. Expenditure Summary

**Institution Name:** Cornell University

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
8489101	0	7054908	0

**Institution Name:** NY State Agricultural Experiment Station

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0

**Institution Name:** Cornell University

2. Total Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	8489102	0	5144210	0
Actual Matching	8489102	0	10063407	0
Actual All Other	0	0	0	0
Total Actual Expended	16978204	0	15207617	0

**Institution Name:** NY State Agricultural Experiment Station

2. Total Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	0	0	1063134	0
Actual Matching	0	0	1375560	0
Actual All Other	0	0	0	0
Total Actual Expended	0	0	2438694	0

<b>3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous</b>				
<b>Carryover</b>	0	0	0	0

**V. Planned Program Table of Content**

<b>S. No.</b>	<b>PROGRAM NAME</b>
1	Agriculture and Food Systems
2	Climate Change
3	Environment and Natural Resources and Sustainable Energy
4	Nutrition, Food Safety and Security, and Obesity Prevention
5	4-H Youth Development/Children, Youth and Families
6	Community and Economic Vitality

**V(A). Planned Program (Summary)**

**Program # 1**

**1. Name of the Planned Program**

Agriculture and Food Systems

Reporting on this Program

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	5%		16%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		10%	
202	Plant Genetic Resources	3%		10%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		3%	
204	Plant Product Quality and Utility (Preharvest)	15%		4%	
206	Basic Plant Biology	10%		1%	
211	Insects, Mites, and Other Arthropods Affecting Plants	5%		15%	
212	Pathogens and Nematodes Affecting Plants	5%		12%	
213	Weeds Affecting Plants	2%		3%	
215	Biological Control of Pests Affecting Plants	3%		8%	
216	Integrated Pest Management Systems	3%		2%	
301	Reproductive Performance of Animals	1%		4%	
302	Nutrient Utilization in Animals	6%		3%	
305	Animal Physiological Processes	2%		1%	
307	Animal Management Systems	16%		1%	
501	New and Improved Food Processing Technologies	6%		2%	
503	Quality Maintenance in Storing and Marketing Food Products	10%		2%	
601	Economics of Agricultural Production and Farm Management	0%		1%	
604	Marketing and Distribution Practices	8%		1%	
610	Domestic Policy Analysis	0%		1%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Inputs)**

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

**Cornell University**

Year: 2015	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	262.5	0.0	11.0	0.0
<b>Actual Paid</b>	183.0	0.0	14.0	0.0
<b>Actual Volunteer</b>	3428.0	0.0	0.0	0.0

**NY State Agricultural Experiment Station**

Year: 2015	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	262.5	0.0	11.0	0.0
<b>Actual Paid</b>	0.0	0.0	4.0	0.0
<b>Actual Volunteer</b>	0.0	0.0	0.0	0.0

**2. Institution Name:** Cornell University

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1469467	0	2130540	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
1469467	0	4485669	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	0	0

**2. Institution Name:** NY State Agricultural Experiment Station

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	912977	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	1175519	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

### V(D). Planned Program (Activity)

#### 1. Brief description of the Activity

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.

#### Sample Statewide/Regional Initiatives that fall within this Plan of Work

- Capital District Vegetable and Small Fruit Program
- Central NY Dairy and Field Crops Program
- Cornell Vegetable Program (Western NY)
- Finger Lakes Grape Program
- Lake Erie Regional Grape Program
- Lake Ontario Fruit Program
- Northeast NY Fruit Program
- South Central NY Dairy and Field Crops Program
- Harvest NY
- Northwest NY Dairy Livestock and Field Crops Program
- Integrated Pest Management

#### 2. Brief description of the target audience

Key audiences served, directly and indirectly, in enhancing agribusiness 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.

#### 3. How was eXtension used?

Cornell Cooperative Extension supports and promotes eXtension communities of practice, the eXtension public site and the professional development offered through eXtension.org. Staff across the state are encouraged to be involved in appropriate COPs, and the link to eXtension is promoted on the front page of the Cornell Cooperative Extension public staff site. Currently 306 staff are registered active users of eXtension, 43 of which are faculty members. Staff have cited the usefulness of COPs - particularly where there are identified national projects - such as with Financial Security for All COP.

Examples of involvement include: Katherine Baildon, a member of the Applied Economics and Management Unit at Cornell leads the **Healthy Food Choices in Schools** Community of Practice; Jeff Piestrak, Outreach Specialist for Mann Library at Cornell is serving as a fellow on a short-term research project around **data structures for food systems and Extension practices**; and Paul Curtis, Associate Professor in the Department of Natural Resources is a teacher in the eXtension course **National Wildlife Control Training Program**.

In 2015, more than 800 questions from NY residents were answered through our Ask an Expert system, thanks to 15 NY State specialists and 103 out-of-state specialists, agents and volunteers who use the system.

Examples of participation in COPs that fall into this plan of work area include:

- Agriculture and Food Law
- Agriscience/AgSTEM
- Apples
- Ashtubula Viticulture and Enology Degrees
- Community, Local & Regional Food Systems
- Cooperatives
- Corn and Soybean Production
- DaireXNET
- Enhancing Rural Capacity
- eOrganic
- Farm Safety and Health
- Farmbill Education Learning Network
- Food Safety
- Foodshed
- Forest Farming
- Global Food Security and Hunger
- Goat Industry
- Grapes
- Greenhouse and Nursery Production
- Livestock and Poultry Environmental Learning Centers
- Niche Meat Processor Assistance Network
- Pesticide Environmental Stewardship
- Pesticide Safety Educational Materials
- Precision Agriculture
- Sheep
- Small and Backyard Flocks
- Women in Ag Learning Network
- Youth Agriculture

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	278623	6467224	41304	958723

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

### Patent Applications Submitted

Year: 2015  
Actual: 2

### Patents listed

Cornell submitted two patents, both of which were on "Biological Control of Crown Gall Disease on Grapevines". The patent PI's were Thomas Burr and Desen Zheng.

## 3. Publications (Standard General Output Measure)

### Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	3	255	258

## V(F). State Defined Outputs

### Output Target

#### Output #1

##### Output Measure

- {No Data Entered}

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	(1.1c) # participants documented to have applied knowledge or skills gained to strengthen existing business operations.
2	(1.1d) # participating family-owned agricultural/ horticultural/natural resources businesses that plan for succession, transfer, or sale of their business.
3	(1.1e) # participants reporting improved agricultural/ horticultural business profitability attributed at least in part to program participation.
4	(1.1f) # business owners successfully completing an inter-generational transfer or other desired dispensation of their business attributed at least in part to program participation.
5	(1.3b) # participants who demonstrate knowledge gains related to needs of potential employees and/or availability of qualified employees.
6	(1.3c) # participants documented to have made one or more changes in human resources practices to enhance labor availability or retention
7	1.3d) # producers/ horticultural businesses reporting improved labor availability, performance, and/or retention of higher skilled and more valuable human resource team members attributed at least in part to program participation
8	(1.2c) # participants documented to have adopted innovations in food enterprises including production, allied services, processing, and distribution
9	(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.
10	(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.
11	(1.4c) # of producers, horticulture business persons, and/or natural resource managers modifying existing practices and/or adopted new production best practices or technologies to address current issues and improve yield efficiency, consistency and/or quality and/or conservation of resources.
12	(1.4d) # 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	(1.4e) # technical assistance providers documented to have incorporated current best management practices in their recommendations.
14	(1.4f) # of producers or horticulture business persons, reporting increased dollar returns per acre or reduced costs per acre.
15	(1.5c) # of producers, horticulture businesses, and/or natural resource managers documented to have assessed potential environmental impacts of their operations and developed and acted on plans to eliminate or minimize those concerns.
16	(1.5d) # of producers, horticulture businesses, and/or natural resource managers documented to have developed and implemented nutrient management and/or waste management plans or modified existing plans to meet production and environmental goals or regulations.

17	1.5e) # of producers, horticulture businesses, and/or natural resource managers documented to meet or exceed current environmental protection standards as a result of participating in relevant educational programs.
18	(1.5f) # resource managers reporting reduced environmental concerns for participating enterprises
19	Small Farms Program

**Outcome #1**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2015	121511

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

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

**Outcome #2**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	554

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
604	Marketing and Distribution Practices

**Outcome #3**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	2409

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
503	Quality Maintenance in Storing and Marketing Food Products
604	Marketing and Distribution Practices

**Outcome #4**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	116

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
604	Marketing and Distribution Practices

**Outcome #5**

**1. Outcome Measures**

(1.3b) # participants who demonstrate knowledge gains related to needs of potential employees and/or availability of qualified employees.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	51

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
604	Marketing and Distribution Practices

**Outcome #6**

**1. Outcome Measures**

(1.3c) # participants documented to have made one or more changes in human resources practices to enhance labor availability or retention

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	42

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
604	Marketing and Distribution Practices

**Outcome #7**

**1. Outcome Measures**

1.3d) # producers/ horticultural businesses reporting improved labor availability, performance, and/or retention of higher skilled and more valuable human resource team members attributed at least in part to program participation

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	19

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
604	Marketing and Distribution Practices

**Outcome #8**

**1. Outcome Measures**

(1.2c) # participants documented to have adopted innovations in food enterprises including production, allied services, processing, and distribution

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	3140

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
501	New and Improved Food Processing Technologies
503	Quality Maintenance in Storing and Marketing Food Products
604	Marketing and Distribution Practices

**Outcome #9**

**1. Outcome Measures**

(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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	436

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
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501	New and Improved Food Processing Technologies
503	Quality Maintenance in Storing and Marketing Food Products
604	Marketing and Distribution Practices

**Outcome #10**

**1. Outcome Measures**

(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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	1203

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
501	New and Improved Food Processing Technologies
503	Quality Maintenance in Storing and Marketing Food Products
604	Marketing and Distribution Practices

**Outcome #11**

**1. Outcome Measures**

(1.4c) # of producers, horticulture business persons, and/or natural resource managers modifying existing practices and/or adopted new production best practices or technologies to address current issues and improve yield efficiency, consistency and/or quality and/or conservation of resources.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	12010

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
204	Plant Product Quality and Utility (Preharvest)
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
503	Quality Maintenance in Storing and Marketing Food Products

**Outcome #12**

**1. Outcome Measures**

(1.4d) # 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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	4483

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
501	New and Improved Food Processing Technologies
503	Quality Maintenance in Storing and Marketing Food Products
604	Marketing and Distribution Practices

**Outcome #13**

**1. Outcome Measures**

(1.4e) # technical assistance providers documented to have incorporated current best management practices in their recommendations.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	1195

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
216	Integrated Pest Management Systems
501	New and Improved Food Processing Technologies
503	Quality Maintenance in Storing and Marketing Food Products
604	Marketing and Distribution Practices

**Outcome #14**

**1. Outcome Measures**

(1.4f) # of producers or horticulture business persons, reporting increased dollar returns per acre or reduced costs per acre.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	5902

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
501	New and Improved Food Processing Technologies
503	Quality Maintenance in Storing and Marketing Food Products
604	Marketing and Distribution Practices

**Outcome #15**

**1. Outcome Measures**

(1.5c) # of producers, horticulture businesses, and/or natural resource managers documented to have assessed potential environmental impacts of their operations and developed and acted on plans to eliminate or minimize those concerns.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	747

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

## Results

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
206	Basic Plant Biology
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems
307	Animal Management Systems

### Outcome #16

#### 1. Outcome Measures

(1.5d) # of producers, horticulture businesses, and/or natural resource managers documented to have developed and implemented nutrient management and/or waste management plans or modified existing plans to meet production and environmental goals or regulations.

#### 2. Associated Institution Types

- 1862 Extension
- 1862 Research

#### 3a. Outcome Type:

Change in Action Outcome Measure

#### 3b. Quantitative Outcome

Year	Actual
2015	93

#### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

**What has been done**

**Results**

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

### **Outcome #17**

#### **1. Outcome Measures**

1.5e) # of producers, horticulture businesses, and/or natural resource managers documented to meet or exceed current environmental protection standards as a result of participating in relevant educational programs.

#### **2. Associated Institution Types**

- 1862 Extension
- 1862 Research

#### **3a. Outcome Type:**

Change in Condition Outcome Measure

#### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	189

#### **3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

#### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
216	Integrated Pest Management Systems
501	New and Improved Food Processing Technologies
604	Marketing and Distribution Practices

### **Outcome #18**

#### **1. Outcome Measures**

(1.5f) # resource managers reporting reduced environmental concerns for participating enterprises

#### **2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	11

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
216	Integrated Pest Management Systems

**Outcome #19**

**1. Outcome Measures**

Small Farms Program

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	0

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

Small family farms, those that have an annual income of less than \$350,000 per year, account for over 90% of farms in New York and nationally. They contribute to food security, healthy rural communities, and the environment; however, their small size often presents unique challenges. Small farmers report issues such as market access, on-farm energy efficiency, soil health, and vegetable production as obstacles to growth. The Cornell Small Farms Program (CSFP) links Cornell University research to small-scale farmers, generating innovative extension initiatives that support and encourage the sustainability of diverse, thriving small farms in New York.

#### What has been done

In addition to maintaining its core of existing projects, including an impressive catalog of online courses and resources, the Cornell Small Farms Program is full of growth and new pursuits. Highlights include a new project to support NYS veterans who own farms or are interested in starting a post-military career in agriculture. The CSFP also launched two other science-based programs, the first aimed at equipping farmers with the skills and resources to successfully market to larger venues, like grocery stores and cooperatives. The second was an Agroforestry program to engage participants who are interested in diversified forms of revenue.

#### Results

Since 2002, the CSFP has been a visionary leader in translating and delivering cutting edge agricultural research to small family farms. During the past year alone, the program has reached over 300 veteran farmers through mailing lists, meetings, and trainings; helped hundreds of beginning farmers through thousands of farmer training services; presented webinars on accessing new markets to over 800 people; and engaged with almost 800 agroforesters through presentations, conferences, and trainings. While the focus of the CSFP is the NYS small farm sector, its resources have attracted attention from farmers (both established and aspiring), educators, and non-profit organizations in all 50 states and over 60 countries. By encouraging small farms-focused research and extension, the CSFP fosters sustainability, food security, economic growth, and a healthy environment in NYS.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
204	Plant Product Quality and Utility (Preharvest)
503	Quality Maintenance in Storing and Marketing Food Products
604	Marketing and Distribution Practices

## **V(H). Planned Program (External Factors)**

### **External factors which affected outcomes**

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

### **Brief Explanation**

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. During the last couple of years highly damaging flood events damaged crop and forest resources in highly productive areas of New York. Recovery is slow for many areas.

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 in some cases creating new market opportunities and in others erosion of traditional markets. Population and land use changes in farming communities has led in some places 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.

There is a growing interest by consumers, communities and producers to market local foods locally. This interest continues to influence programs, research and funding availability. These trends are expected to continue.

## **V(I). Planned Program (Evaluation Studies)**

### **Evaluation Results**

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 are expected to provide comprehensive assessment. We work towards this goal by doing two things - professional development to enhance evaluation capacity of our system and collecting quantitative and qualitative documentation of local, regional and statewide programs.

**Evaluation Capacity Building:** Cornell Cooperative Extension has worked with the Cornell Office of Research on Evaluation (CORE) to strengthen evaluation practice and build evaluation capacity. CORE developed The Systems Evaluation Protocol that takes programs from logic models (columnar) to pathway models (visual) and helps to create an evaluation strategy. CORE tested and refined The Systems Evaluation Protocol in partnership with CCE

programs from 2006 - 2015. The Protocol has been integrated into professional development in CCE, to promote consistent approaches to evaluation of county-based, regional, and statewide programs. Although the formal project connection with CORE ended in 2015, access to the Netway and online training continue to be available.

**Regional/Statewide documentation examples.** Many of our regional and statewide programs are receiving federal capacity funds. Documentation of outcomes is a requirement of funding. Results shape future program efforts and impact program design. **An example evaluation practice can be found below.**

**There is also a requirement for our local and regional programs to report on statewide outcomes/indicators:** Program documentation results are aggregated in a statewide accountability database that includes both qualitative and quantitative data for reporting and helping us to better understand impacts. Quantitative system wide outcome data is reported in the outcome portion of this report.

## Key Items of Evaluation

### Sample Program Evaluation:

Small Ruminant Parasites - use of pre-post quiz for knowledge gains, follow up electronic survey planned for practice change

The activities undertaken were part of an integrated project to investigate and apply modern methods to the control of internal parasites in sheep and goats. In the education portion of this project Cornell Cooperative Extension, the focus was on education and on-farm testing of three particular methods of internal parasite control. Cornell Department of Animal Science partnered with county extension educators, veterinarians, and other information extenders to hold seminars and workshops to reduce the reliance on anthelmintic deworming to prevent worm resistance and preserve drug use for emergency use.

Pre- and post-quizzes to measure changes in knowledge about integrated parasite management were completed by participants at five parasite workshops. Average before and after results for the percentage of questions answered correctly changed from 55.2% to 77.5%. Approximately 41%, 42%, 55%, 59% and 60% of the participants, respectively, plan to adopt parasite management practices as a result of attending the workshops including implementing or improving FAMACHA scoring, fecal egg counting, selective deworming and smart drug use, as well as several pasture management practices including improved rotation, lower animal density, mixed species grazing, and use of condensed tannin forages.

An invitation to participate in a follow up survey will go out to 400+ workshop participants from 2013, 2014 and 2015. The follow-up survey to evaluate practices adopted or improved as well as economic and production impacts has been drafted with Extension staff. The follow up survey will be administered online, or in hard copy format or by phone as requested by the producer.

<http://sheep.cornell.edu/2170-2/>

**V(A). Planned Program (Summary)**

**Program # 2**

**1. Name of the Planned Program**

Climate Change

Reporting on this Program

**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	0%		6%	
104	Protect Soil from Harmful Effects of Natural Elements	7%		0%	
111	Conservation and Efficient Use of Water	15%		1%	
112	Watershed Protection and Management	17%		11%	
125	Agroforestry	5%		0%	
132	Weather and Climate	14%		8%	
133	Pollution Prevention and Mitigation	10%		18%	
135	Aquatic and Terrestrial Wildlife	8%		24%	
136	Conservation of Biological Diversity	15%		4%	
141	Air Resource Protection and Management	2%		1%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	2%		0%	
405	Drainage and Irrigation Systems and Facilities	5%		0%	
902	Administration of Projects and Programs	0%		27%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Inputs)**

1. Actual amount of FTE/SYs expended this Program

**Cornell University**

Year: 2015	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	79.9	0.0	6.0	0.0
<b>Actual Paid</b>	12.0	0.0	5.0	0.0
<b>Actual Volunteer</b>	4158.0	0.0	0.0	0.0

**NY State Agricultural Experiment Station**

Year: 2015	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	79.9	0.0	6.0	0.0
<b>Actual Paid</b>	0.0	0.0	0.0	0.0
<b>Actual Volunteer</b>	0.0	0.0	0.0	0.0

**2. Institution Name:** Cornell University

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
98099	0	724051	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
98099	0	1304174	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	0	0

**2. Institution Name:** NY State Agricultural Experiment Station

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	5999	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
0	0	8350	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	0	0

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

The initiative is guided by faculty and staff involved with several programs:

- The Cornell Climate Change Program Work Team (PWT) was formed in 2010 and currently has more than sixty five members comprised of Cornell faculty, staff, Cornell Cooperative Extension educators from around New York State, and external stakeholders who are working to advance climate change research and outreach programs. The PWT provides a mechanism through which faculty and extension educators

connect with stakeholders to identify the needs surrounding climate change impacts and opportunities in New York State, create educational materials, and design learning experiences that address these needs. You can view the list of Climate Change PWT members at the Cornell Cooperative Extension website.

- The Cornell Institute for Climate Change and Agriculture (CICCA) is focused on supporting farmers of New York and beyond with decision tools for strategic adaptation to climate change, so that they are better able to cope with potential negative effects of climate change, and are better able to take advantage of any opportunities that it might bring.

- The Cornell Cooperative Extension (CCE) system extends Cornell University's land-grant programs to citizens all across New York State.

- The Atkinson Center for a Sustainable Future's (ACSF) Climate Change Focus Group began in 2008 and currently has 17 interdisciplinary faculty members from across campus, representing disciplines such as: climate science, ecology, agriculture, engineering, economics, history, and social sciences, that guide research and teaching at the University.

- NY EDEN <http://emergencypreparedness.cce.cornell.edu/Pages/default.aspx> The New York Extension Disaster Education Network (NY EDEN) is a collaborative educational network based at Cornell University, dedicated to educating New York residents about preventing, preparing for and recovering from emergencies and disasters that could affect their families and communities. NY EDEN is affiliated with both the national USDA EDEN network and with Cornell University Cooperative Extension.

- NYS Integrated Pest Management <http://www.nysipm.cornell.edu/> - Research, demonstrations, education, and outreach are part of a comprehensive plan to make IPM the safe, effective pest management solution for all New Yorkers. Solutions that help protect our health, our economic well-being, and our environment.

- Invasive Species Education and Monitoring Efforts: <http://www.nyis.info/> The Mission of the Clearinghouse is to be a gateway for New Yorkers to access timely, accurate scientific and policy information to assist them in making informed decisions about preventing, eradicating, controlling and managing invasive species in New York State and to focus attention on the need for invasive species prevention, eradication and management in New York. The Clearinghouse also provides information on upcoming invasive species events and invasive species news of interest to New Yorkers. The Clearinghouse has subsumed the National Aquatic Nuisance Species Clearinghouse and its Aquatic Invasive Species Database and has formed linkages with the New York Invasive Species Database (iMapInvasives), the New York Invasive Species Research Institute at Cornell, and numerous State and Federal agency invasive species programs. The Clearinghouse works closely with the State's eight PRISMs (Partnerships for Regional Invasive Species Management - see navigation bar PRISM tab) to support them in their invasive species activities.

- Master Watershed Stewards Program <http://dnr.cornell.edu/outreach/watershedsteward/> The mission of the New York Master Watershed Steward Program is to strengthen local capacity for successful management and protection of watersheds by empowering volunteers.

- Stormwater Management <http://www.clrp.cornell.edu/workshops/stormwater.html> Stormwater management training is part of the the Cornell Local Roads program which provide training and technical assistance to local highway and public works officials in New York State.

## 2. Brief description of the target 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, non-government organizations, individual consumers, and youth.

## 3. How was eXtension used?

Cornell Cooperative Extension supports and promotes eXtension communities of practice, the eXtension public site and the professional development offered through eXtension.org. Staff across the state are encouraged to be involved in appropriate COPs, and the link to eXtension is promoted on the front page of the Cornell Cooperative Extension public staff site. Currently 306 staff are registered active users of eXtension, 43 of which are faculty members. Staff have cited the usefulness of COPs - particularly where there are identified national projects - such as with Financial Security for All COP.

Examples of involvement include: Katherine Baildon, a member of the Applied Economics and Management Unit a Cornell leads the **Healthy Food Choices in Schools** Community of Practice; Jeff Piestrak, Outreach Specialist for Mann Library at Cornell is serving as a fellow on a short-term research project around **data structures for food systems and Extension practices**; and Paul Curtis, Associate Professor in the Department of Natural Resources is a teacher in the eXtension course **National Wildlife Control Training Program**.

In 2015, more than 800 questions from NY residents were answered through our Ask an Expert system, thanks to 15 NY State specialists and 103 out-of-state specialists, agents and volunteers who use the system.

Examples of participation in COPs that fall into this plan of work area include:

- Bee Health
- Climate Change
- Climate, Woodlands, and Forests
- Invasive Species
- Urban Integrated Pest Management
- Water Conservation for Lawn and Landscapes

## V(E). Planned Program (Outputs)

### 1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	140080	2090943	11929	178062

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

#### Patent Applications Submitted

Year: 2015

Actual: 0

#### Patents listed

### 3. Publications (Standard General Output Measure)

#### Number of Peer Reviewed Publications

<b>2015</b>	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Actual</b>	0	56	56

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- {No Data Entered}

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	(2.1b) # of consumers, residents, agricultural/ natural resources producers, organization and business representatives, and/or local government and community leaders 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, organization and business representatives documented to have adopted recommended adaptation strategies for production agriculture and natural resources management, including invasive species, pest management, pollutant loads, wetlands, etc.
3	(2.1d) # of agencies/ organizations/ communities documented to have adopted recommended climate mitigation practices and policies.
4	(2.4c) # consumers, residents, agricultural/ natural resources producers, organization and business representatives, and/or local government and community leaders documented to have modified existing practices or technologies and/or adopted new practices to protect/enhance water resources.
5	(2.4d) # documented instances when consumers, residents, agricultural/ natural resources producers, organization and business representatives, and/or local government and community leaders have improved and/or protected water resources.
6	(2.7c) # of consumers, residents, agricultural/ natural resources producers, organization and business representatives, and/or local government and community leaders documented to have modified existing practices or technologies and/or adopted new practices to protect/enhance natural resources and/or enhance biodiversity.
7	Maximizing Ecosystem Benefits of Urban Trees by Determining Sustainable Soil Volume Requirements (Bassuk; 2012 - 2015)

**Outcome #1**

**1. Outcome Measures**

(2.1b) # of consumers, residents, agricultural/ natural resources producers, organization and business representatives, and/or local government and community leaders who demonstrate knowledge gains about on the causes and implications of climate change and adaptive or mitigating strategies.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	14383

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
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

**Outcome #2**

**1. Outcome Measures**

(2.1c) # agricultural/ natural resources producers, organization and business representatives documented to have adopted recommended adaptation strategies for production agriculture and natural resources management, including invasive species, pest management, pollutant loads, wetlands, etc.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	359

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
111	Conservation and Efficient Use of Water
132	Weather and Climate
133	Pollution Prevention and Mitigation
405	Drainage and Irrigation Systems and Facilities

**Outcome #3**

**1. Outcome Measures**

(2.1d) # of agencies/ organizations/ communities documented to have adopted recommended climate mitigation practices and policies.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	42

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
132	Weather and Climate

**Outcome #4**

**1. Outcome Measures**

(2.4c) # consumers, residents, agricultural/ natural resources producers, organization and business representatives, and/or local government and community leaders documented to have modified existing practices or technologies and/or adopted new practices to protect/enhance water resources.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	13497

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
104	Protect Soil from Harmful Effects of Natural Elements
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management

**Outcome #5**

**1. Outcome Measures**

(2.4d) # documented instances when consumers, residents, agricultural/ natural resources producers, organization and business representatives, and/or local government and community leaders have improved and/or protected water resources.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	12964

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
104	Protect Soil from Harmful Effects of Natural Elements
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management

**Outcome #6**

**1. Outcome Measures**

(2.7c) # of consumers, residents, agricultural/ natural resources producers, organization and business representatives, and/or local government and community leaders documented to have modified existing practices or technologies and/or adopted new practices to protect/enhance natural resources and/or enhance biodiversity.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	14985

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

## What has been done

### Results

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
104	Protect Soil from Harmful Effects of Natural Elements
111	Conservation and Efficient Use of Water
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants

### Outcome #7

#### 1. Outcome Measures

Maximizing Ecosystem Benefits of Urban Trees by Determining Sustainable Soil Volume Requirements (Bassuk; 2012 - 2015)

#### 2. Associated Institution Types

- 1862 Extension
- 1862 Research

#### 3a. Outcome Type:

Change in Action Outcome Measure

#### 3b. Quantitative Outcome

Year	Actual
2015	0

#### 3c. Qualitative Outcome or Impact Statement

##### Issue (Who cares and Why)

Urban environments can be up to 20°F warmer than the surrounding rural countryside, resulting in increased energy demand for cooling as well as higher incidences of heat-related illnesses. Known as "urban heat islands", asphalt parking lots and roads store heat and re-radiate it during cooler parts of the day. Buildings prevent heat dissipation and impede airflow. Increasing vegetation cover helps to mitigate these effects by reducing temperatures in surrounding areas. Research is needed to determine the minimum volume of accessible soil for successful establishment and sustained growth of trees in the urban environment.

##### What has been done

Using Ground Penetrating Radar, Bassuk and her team surveyed root systems of common trees (e.g., red maple, Accolade (trademark) elm, goldenrain tree, and chinkapin oak) and related them to standard tree measurements. Radar provided a window into the extent of roots growing in several common urban planting conditions, including open lawns, tree lawns, standard tree pits

surrounded by sidewalks, and traditional and porous parking lots. With updates to the oft-cited Lindsey/Bassuk model (1991), they calculated soil volume requirements for the 38 study trees and transformed their results into a soil volume calculator tool for stakeholders.

**Results**

The effectiveness of efforts to implement large-scale urban planting programs depends on meeting sustainable soil volume requirements. Bassuk and her colleagues found that trunk diameter was a strong indicator of rooting volume, thus identifying a proxy for the more expensive Ground Penetrating Radar. Additionally, statistical improvements to their previous soil volume model represent a substantial advance in urban forestry, which the team worked hard to communicate. Through academic courses and Cornell Cooperative Extension training programs, methods for calculating adequate space for trees were taught to students, master gardeners, landscape architects, and urban foresters. With education and outreach, including future improvements to their interactive soil volume calculator, Bassuk's hope is that trees will be given priority consideration in urban landscape design, and their mitigating effects on urban heat islands will be more fully realized.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
104	Protect Soil from Harmful Effects of Natural Elements
132	Weather and Climate
136	Conservation of Biological Diversity

**V(H). Planned Program (External Factors)**

**External factors which affected outcomes**

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

**Brief Explanation**

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. Flooding events during recent years continues to elevate consumer and community interest in disaster preparedness and water quality protection for families, communities and farms. The shift in interest, program offerings and campus and research support is evident. These trends are expected to continue.

**V(I). Planned Program (Evaluation Studies)**

## Evaluation Results

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 are expected to provide comprehensive assessment. We work towards this goal by doing two things - professional development to enhance evaluation capacity of our system and collecting quantitative and qualitative documentation of local, regional and statewide programs.

**Evaluation Capacity Building:** Cornell Cooperative Extension has worked with the Cornell Office of Research on Evaluation (CORE) to strengthen evaluation practice and build evaluation capacity. CORE developed The Systems Evaluation Protocol that takes programs from logic models (columnar) to pathway models (visual) and helps to create an evaluation strategy. CORE tested and refined The Systems Evaluation Protocol in partnership with CCE programs from 2006 - 2015. The Protocol has been integrated into professional development in CCE, to promote consistent approaches to evaluation of county-based, regional, and statewide programs. Although the formal project connection with CORE ended in 2015, access to the Netway and online training continue to be available.

**Regional/Statewide documentation examples.** Many of our regional and statewide programs are receiving federal capacity funds. Documentation of outcomes is a requirement of funding. Results shape future program efforts and impact program design. **An example evaluation practice can be found below.**

**There is also a requirement for our local and regional programs to report on statewide outcomes/indicators:** Program documentation results are aggregated in a statewide accountability database that includes both qualitative and quantitative data for reporting and helping us to better understand impacts. Quantitative system wide outcome data is reported in the outcome portion of this report.

## Key Items of Evaluation

### Sample Program Evaluation:

Engaging Volunteers in Climate - use of journals/logs

The project introduced climate change impacts and proactive adaptation and management techniques to participants in the NY Master Naturalist Volunteer program and other organizations such as lake associations, municipalities, and watershed groups. Fifteen Master Naturalist volunteers from across the state participated in a 3-day, engaged learning and community stewardship workshop in the northern Catskills. The program was a collaboration with staff from the Cornell Department of Natural Resources, Cornell Cooperative Extension of Columbia and Greene counties, the Hudson River Estuary Stream Resiliency Project (designed to address the challenges of flooding, stream and watershed management) and the New York Department of Environmental Conservation's Trees for Tributaries Program.

The climate-focused engaged learning project was evaluated using a reflection activity which encouraged participants to write about their experiences noting what they learned in terms of climate change and its impacts on the environment and local communities and

what actions could be taken to increase resilience in the face of climate change. Volunteers noted that the engaged learning weekend in the Catskill Watershed resulted in significant benefits to local riparian buffer restoration and monitoring efforts, and that they were exposed to a myriad of different learning opportunities and management techniques. Through their writings, volunteers spoke about the impact of heavy rain events on local biodiversity and the importance of stream resilience, especially in a new era of higher magnitude weather events. The volunteers summed up the weekend's expedition, saying "This training gave me first-hand knowledge of the potential of severe weather events and the impact they can have on our streams and waterways. It was interesting to learn of the simple act of planting the right trees and shrubs and the impact they can have on stream bank stability." And "I loved being part of the community of volunteers! Great group and for me a real sense of trying to do something worthwhile. I left really motivated to go find other ways to get involved with stream and wetlands work." Local agency and organization partners were also positive about the level of interest and engagement from the volunteers. They noted that a great deal of important work was accomplished in a short period of time and that the volunteers were interested, engaged and highly productive.

<http://blogs.cornell.edu/ceerp/master-naturalist-program/>

**V(A). Planned Program (Summary)**

**Program # 3**

**1. Name of the Planned Program**

Environment and Natural Resources and Sustainable Energy

Reporting on this Program

**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%		0%	
124	Urban Forestry	10%		2%	
205	Plant Management Systems	0%		62%	
401	Structures, Facilities, and General Purpose Farm Supplies	14%		0%	
402	Engineering Systems and Equipment	8%		6%	
403	Waste Disposal, Recycling, and Reuse	25%		16%	
404	Instrumentation and Control Systems	5%		1%	
511	New and Improved Non-Food Products and Processes	0%		10%	
605	Natural Resource and Environmental Economics	20%		3%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Inputs)**

1. Actual amount of FTE/SYs expended this Program

**Cornell University**

Year: 2015	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	51.3	0.0	2.0	0.0
<b>Actual Paid</b>	102.0	0.0	3.0	0.0
<b>Actual Volunteer</b>	2122.0	0.0	0.0	0.0

**NY State Agricultural Experiment Station**

Year: 2015	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	51.3	0.0	2.0	0.0

<b>Actual Paid</b>	0.0	0.0	1.0	0.0
<b>Actual Volunteer</b>	0.0	0.0	0.0	0.0

**2. Institution Name:** Cornell University

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
822519	0	456197	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
822519	0	874997	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

**2. Institution Name:** NY State Agricultural Experiment Station

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	112243	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	161976	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

This is a program that entails 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.

Topics include: Waste management, wildlife management and forestry, renewable energy resources, energy conservation and efficiency, heating with wood, forestry etc.

**Sample Statewide/Regional Initiatives that fall within this Plan of Work**

- Urban Forestry
- Master Forest Owners
- Private Forest Stewardship Program
- Master Naturalist
- Maple Program
- Farm Energy Audits
- Save Energy, Save Dollars
- Green Building Seminar Series
- Energy Education in Camp
- Master Composters
- Recycling Ag Plastics
- Farm Waste Management

## 2. Brief description of the target audience

- Key audiences served, directly and indirectly include: agricultural and natural resource producers; consumers and property owners, businesses and organizations, teachers, youth professionals and volunteers, local/state/federal governmental leaders.
- Businesses, organizations, and producers are targeted with information about improved management practices and alternative land uses, such as agroforestry. Environmental planners and managers and technical assistance providers, such as foresters, are targeted with in-depth information related to their audiences/constituents. Teachers, youth professionals and volunteers are targeted with in-depth knowledge for youth enrichment.
- Agricultural/horticulture/natural resource and supporting businesses are targeted both regarding bioenergy production opportunities and information regarding alternative energy sources and conservation. Consumers are targeted for information regarding energy supply alternatives and energy conservation options for residential, facilities, and transportation needs.
- 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. Teachers and youth professionals and volunteers are provided with curriculum and training. Youth are targeted with age appropriate education.

## 3. How was eXtension used?

Cornell Cooperative Extension supports and promotes eXtension communities of practice, the eXtension public site and the professional development offered through eXtension.org. Staff across the state are encouraged to be involved in appropriate COPs, and the link to eXtension is promoted on the front page of the Cornell Cooperative Extension public staff site. Currently 306 staff are registered active users of eXtension, 43 of which are faculty members. Staff have cited the usefulness of COPs - particularly where there are identified national projects - such as with Financial Security for All COP.

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In 2015, more than 800 questions from NY residents were answered through our Ask an Expert system, thanks to 15 NY State specialists and 103 out-of-state specialists, agents and volunteers who use the

Examples of participation in COPs in this plan of work area include:

- Consumer Horticulture
- Drinking Water & Human Health
- Forest Farming
- Forests and Woodlands
- Home Energy
- NEWBio-Northeast Woody/Warm-season Biomass
- Sustainable Ag Energy
- Wildlife Damage Management
- Wood Energy

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	95531	4153120	49433	2149053

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

**Patent Applications Submitted**

Year: 2015  
 Actual: 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2015	Extension	Research	Total
<b>Actual</b>	1	219	0

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- {No Data Entered}

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	(3.1f) # of producers, economic development organizations and other groups who collaborate to establish bioenergy as a viable alternative crop.
2	(3.1g) # of existing or new producers documented to have modified existing practices or technologies and/or adopted best management practices for bio-energy production, harvesting, and/or storage systems.
3	(3.1h) # of producers, horticulture businesses and/or natural resource managers reporting that cropping for and/or use of bio-energy leads to increased economic returns to their enterprises.
4	(3.2c) # of agricultural/horticultural/ natural resource businesses documented to have adopted appropriate alternative energy sources and/or energy conservation practices.
5	(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.
6	(3.3c) # of consumers documented to have adopted appropriate alternative energy sources.
7	(3.3d) # of consumers who report savings on energy costs attributable to adopting alternative energy sources.
8	(3.4c) # of consumers reporting to have adopted appropriate energy cost control and/or conservation practices.
9	(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.
10	(3.4e) # of consumers who report savings on energy costs attributable to adopting energy conservation measures.
11	(3.5e) # of communities documented to have assessed local energy development proposals and/or the relationships between current policies and regulations and energy conservation.
12	(3.5f) # of community agencies/ organizations documented to have adopted appropriate alternative energy sources.
13	(3.5h) # of communities documented to have established or modified land use and development policies to promote energy conservation.
14	(3.5i) # of community agencies/organizations reporting savings on energy costs attributable to adopting alternative energy sources.
15	(3.5m) # of communities that adapt or revise policies in response to large scale energy development (e.g., Marcellus shale development) and/or include energy as a component of their comprehensive plans.
16	(3.6b) # of agricultural/natural resources producers, organization and business representatives, community leaders, and/or residents who demonstrate knowledge gains about waste management and reduction.
17	(3.6c) 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. (150)

18	(3.6d) # of agricultural/natural resources producers, organization and business representatives, community leaders, and/or residents documented to have reduced costs through improved waste management practices.
19	(3.7c) agricultural/natural resources producers, organization and business representatives, community leaders, and/or residents documented to have modified existing practices or technologies that will assist with natural resources management and the environment
20	CCE and Local EAB Task Forces (Whitmore; 2012 - 2015)

**Outcome #1**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2015	7

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
404	Instrumentation and Control Systems
605	Natural Resource and Environmental Economics

## **Outcome #2**

### **1. Outcome Measures**

(3.1g) # of existing or new producers documented to have modified existing practices or technologies and/or adopted best management practices for bio-energy production, harvesting, and/or storage systems.

### **2. Associated Institution Types**

- 1862 Extension
- 1862 Research

### **3a. Outcome Type:**

Change in Action Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	17

### **3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
404	Instrumentation and Control Systems
605	Natural Resource and Environmental Economics

## **Outcome #3**

### **1. Outcome Measures**

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

### **2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	15

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
123	Management and Sustainability of Forest Resources
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
404	Instrumentation and Control Systems
605	Natural Resource and Environmental Economics

**Outcome #4**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	109

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
404	Instrumentation and Control Systems
605	Natural Resource and Environmental Economics

**Outcome #5**

**1. Outcome Measures**

(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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	71

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
404	Instrumentation and Control Systems
605	Natural Resource and Environmental Economics

**Outcome #6**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	4762

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
605	Natural Resource and Environmental Economics

### **Outcome #7**

#### **1. Outcome Measures**

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

#### **2. Associated Institution Types**

- 1862 Extension
- 1862 Research

#### **3a. Outcome Type:**

Change in Condition Outcome Measure

#### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	5530

#### **3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

#### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
605	Natural Resource and Environmental Economics

### **Outcome #8**

#### **1. Outcome Measures**

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

#### **2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2015	6455

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
124	Urban Forestry
403	Waste Disposal, Recycling, and Reuse
605	Natural Resource and Environmental Economics

**Outcome #9**

**1. Outcome Measures**

(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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2015	76

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
403	Waste Disposal, Recycling, and Reuse
404	Instrumentation and Control Systems
605	Natural Resource and Environmental Economics

**Outcome #10**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	3347

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
124	Urban Forestry
403	Waste Disposal, Recycling, and Reuse

**Outcome #11**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2015	12

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
124	Urban Forestry
403	Waste Disposal, Recycling, and Reuse

**Outcome #12**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	2

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
605	Natural Resource and Environmental Economics

**Outcome #13**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
124	Urban Forestry

**Outcome #14**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	2

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
123	Management and Sustainability of Forest Resources
401	Structures, Facilities, and General Purpose Farm Supplies
402	Engineering Systems and Equipment

**Outcome #15**

**1. Outcome Measures**

(3.5m) # of communities that adapt or revise policies in response to large scale energy development (e.g., Marcellus shale development) and/or include energy as a component of their comprehensive plans.

**2. Associated Institution Types**

- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2015	8

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics

**Outcome #16**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	4203

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
401	Structures, Facilities, and General Purpose Farm Supplies
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
404	Instrumentation and Control Systems

**Outcome #17**

**1. Outcome Measures**

(3.6c) 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. (150)

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	2492

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
401	Structures, Facilities, and General Purpose Farm Supplies
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
404	Instrumentation and Control Systems

**Outcome #18**

**1. Outcome Measures**

(3.6d) # 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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	3216

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
401	Structures, Facilities, and General Purpose Farm Supplies
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
404	Instrumentation and Control Systems

**Outcome #19**

**1. Outcome Measures**

(3.7c) agricultural/natural resources producers, organization and business representatives, community leaders, and/or residents documented to have modified existing practices or technologies that will assist with natural resources management and the environment

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	4964

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
605	Natural Resource and Environmental Economics

**Outcome #20**

**1. Outcome Measures**

CCE and Local EAB Task Forces (Whitmore; 2012 - 2015)

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Emerald Ash Borer (EAB) is an invasive, non-native beetle that will likely kill all species of ash in New York. First detected near Detroit in 2002, it is currently found in 25 states and 2 provinces and is responsible for killing millions of trees despite tremendous management interventions. The greatest impact has been felt in the urban environment, where communities must deal with the safety hazards posed by dead trees, including maintenance of roads and electrical infrastructure. Counties, municipalities, and landowners must make management decisions to mitigate EAB impact, and local EAB task forces can provide vital assistance in this process.

**What has been done**

This project was designed to build capacity in local EAB task forces by using Cornell Cooperative Extension (CCE) to disseminate information about EAB impacts and provide a forum for science-based decision-making in local governments. Seven local task forces were established to discuss current EAB research, management tactics, and local resources necessary for planning. The groups initiated a number of exciting activities, including tree tagging events, first detector trainings, tree inventories, workshops with municipalities, and educational events for homeowners.

**Results**

EAB task forces brought members of the community together and fostered a space for collaboration and planning among local stakeholders in all of the urban areas in New York. Surveys of task force members revealed universal agreement that the task force increased their understanding of the ecological, social, and economic impacts of EAB infestations, as well as early treatment and removal options. The results have been encouraging, with groups working together to raise awareness, develop plans to combat EAB, and produce multiyear budgets to mitigate economic impacts. The last two years have seen crucial increases in management

planning and reductions in the overall costs of managing EAB, impacts of the project that will be evident in the landscape for years to come.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
124	Urban Forestry
605	Natural Resource and Environmental Economics

#### V(H). Planned Program (External Factors)

##### External factors which affected outcomes

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

##### Brief Explanation

The interaction between natural disasters, the economy, energy and waste management 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. Dramatic cuts in state funding for consumer energy education is a significant barrier. Public and private funders and CCE may have fewer fiscal resources and other resources to devote to energy and natural resource protection matters. These trends are expected to continue.

#### V(I). Planned Program (Evaluation Studies)

##### Evaluation Results

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 are expected to provide comprehensive assessment. We work towards this goal by doing two things - professional development to enhance evaluation capacity of our system and collecting quantitative and qualitative documentation of local, regional and statewide programs.

**Evaluation Capacity Building:** Cornell Cooperative Extension has worked with the Cornell Office of Research on Evaluation (CORE) to strengthen evaluation practice and build evaluation capacity. CORE developed The Systems Evaluation Protocol that takes programs from logic models (columnar) to pathway models (visual) and helps to create an evaluation strategy. CORE tested and refined The Systems Evaluation Protocol in partnership with CCE

programs from 2006 - 2015. The Protocol has been integrated into professional development in CCE, to promote consistent approaches to evaluation of county-based, regional, and statewide programs. Although the formal project connection with CORE ended in 2015, access to the Netway and online training continue to be available.

**Regional/Statewide documentation examples.** Many of our regional and statewide programs are receiving federal capacity funds. Documentation of outcomes is a requirement of funding. Results shape future program efforts and impact program design. **An example evaluation practice can be found below.**

**There is also a requirement for our local and regional programs to report on statewide outcomes/indicators:** Program documentation results are aggregated in a statewide accountability database that includes both qualitative and quantitative data for reporting and helping us to better understand impacts. Quantitative system wide outcome data is reported in the outcome portion of this report.

## Key Items of Evaluation

### Sample Program Evaluation:

From the Emerald Ash Borer Task Force project - use of post survey

EAB Task Forces brought members of the community together and fostered a space for collaboration and planning among local stakeholders in all of the urban areas in New York. A survey of task force members was conducted in June/July of 2015 electronically using Qualtrics to evaluate the impacts of the task forces on collaboration and learning. The survey was sent to 67 individuals who are regular participants of an EAB task force in 3 locations. 47 responses were received, for a 70% response rate.

**Learning in the task forces** Survey recipients were given a set of statements to assess if learning has taken place in the task forces. There was almost universal agreement that participation in the EAB task force has increased their understanding of the ecological impacts, the social and economic impacts and the management options available regardless of the previous level of knowledge that participants came in with. Very high agreement was also found that the EAB task force has helped participants understand the perspective of others, and that involvement in the EAB task force has increased their communication and cooperation with others. Lower levels of agreement were given to the ideas that the EAB task force has changed views on what goals should steer management of ash trees. There was high agreement on the last statement: I have collaborated with individuals I have met through the EAB task force on other projects. This is an indication that the EAB task forces are helping develop professional ties that will last beyond this particular issue.

**Collaboration and Networks** Through the survey, recipients were asked how frequently they were in contact with other task force members prior to their involvement in the EAB task force and currently Network density was used to determine if new connections have been made through the task force and is a ratio of the number of individuals with some level of contact over the total number of potential relationships. The density of ties increased in each task force, from about a quarter of the individuals knowing each other to 40-50% of individuals knowing each other. The frequency of communication also increased in each task force, with respondents reporting an average frequency of communication between once a year and never prior to their involvement in the EAB task force. Currently, respondents reported a frequency of communication of several times a year to once a year.

Respondents were also asked to identify "...organizations or individuals to whom you have given information, advice, support or help on EAB or ash management." The survey respondents from Ulster County gave information on 17 individuals and organizations that they have provided with information, advice, support or help on EAB and ash management. Onondaga County task force members identified 40 individuals and organizations and WNY task force members identified 44 individuals and organizations. This is strong evidence that the EAB task forces have successfully multiplied outreach and education around EAB. The largest three groups identified as recipients of information were municipalities, the general public and county agencies, which is consistent with stakeholder groups that will be most impacted by EAB.

**V(A). Planned Program (Summary)**

**Program # 4**

**1. Name of the Planned Program**

Nutrition, Food Safety and Security, and Obesity Prevention

Reporting on this Program

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
303	Genetic Improvement of Animals	0%		2%	
311	Animal Diseases	0%		17%	
313	Internal Parasites in Animals	0%		3%	
315	Animal Welfare/Well-Being and Protection	0%		3%	
405	Drainage and Irrigation Systems and Facilities	0%		4%	
502	New and Improved Food Products	5%		3%	
603	Market Economics	0%		2%	
607	Consumer Economics	0%		1%	
701	Nutrient Composition of Food	15%		3%	
702	Requirements and Function of Nutrients and Other Food Components	15%		7%	
703	Nutrition Education and Behavior	40%		5%	
704	Nutrition and Hunger in the Population	0%		2%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	0%		5%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	0%		21%	
721	Insects and Other Pests Affecting Humans	0%		2%	
722	Zoonotic Diseases and Parasites Affecting Humans	0%		3%	
723	Hazards to Human Health and Safety	0%		7%	
724	Healthy Lifestyle	25%		9%	
903	Communication, Education, and Information Delivery	0%		1%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Inputs)**

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

**Cornell University**

Year: 2015	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	206.3	0.0	2.0	0.0
<b>Actual Paid</b>	247.0	0.0	8.0	0.0
<b>Actual Volunteer</b>	24329.0	0.0	0.0	0.0

**NY State Agricultural Experiment Station**

Year: 2015	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	206.3	0.0	2.0	0.0
<b>Actual Paid</b>	0.0	0.0	0.0	0.0
<b>Actual Volunteer</b>	0.0	0.0	0.0	0.0

**2. Institution Name:** Cornell University

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1988836	0	1226310	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
1988836	0	2200600	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	0	0

**2. Institution Name:** NY State Agricultural Experiment Station

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	31915	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	29715	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

Programs for children and youth are delivered through a variety of settings: afterschool programs, in-school student enrichment, 4-H clubs, summer camps, and fairs, as well as through cooking or other educational programs involving both children and their parent or caregiver. Family-focused programs promote a positive parent/caregiver-child feeding relationship and an understanding of age appropriate nutrition and physical activity. Extension staff also collaborate with community leaders to improve the local policies, systems, and environments 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. Professional development is provided to county and regional staff through in-person and online trainings.

Food safety activities provide educational programs in collaboration with regulatory agencies involved with assuring the safety and wholesomeness of food grown, processed, prepared, sold and handled and consumed by the public in New York State. They are delivered via courses, presentations and educational materials, support transfer of new research-based information for appropriate applications in the agricultural production, manufacturing, retailing and food service industries.

Food security activities may be aimed at both/either nutrition and garden-based efforts which address culturally acceptable, nutritionally adequate, safely grown diets and sustainable growing projects through a variety of means, including school and community gardens and youth-led food systems activities.

**Sample Statewide/Regional Initiatives that fall within this Plan of Work**

- Adopting Healthy Habits (AHH)
- Choose Health Action Teens (CHAT)
- Choose Health: Fun, Food & Fitness (CHFFF)
- Choose Health Officers (CHO)
- Cooking Up Fun!: Vary Your Veggies
- Cornell Healthy After School Self-Assessment (CHASE)
- Cornell Farm to School Research and Extension Program
- Cornell NutritionWorks Online Professional Development Program
- Discovering Our Food System
- Expanded Food and Nutrition Education Program (EFNEP)
- Farmers Market Nutrition Program

- Master Gardener Volunteer Program
- National GAPs Program Online Produce Safety Course
- Northeast Regional Nutrition Education and Obesity Prevention Center of Excellence (NE-RNECE)
- Produce Safety Alliance Grower and Train-the-Trainer Programs
- Seed to Supper
- Supplemental Nutrition Assistance Program - Education (SNAP-Ed)
- Youth Grow
- Youth Healthy Eating and Active Living Program Work Team (YHEAL PWT)

## 2. Brief description of the target 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.
- Food safety 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.
- 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.

## 3. How was eXtension used?

Cornell Cooperative Extension supports and promotes eXtension communities of practice, the eXtension public site and the professional development offered through eXtension.org. Staff across the state are encouraged to be involved in appropriate COPs, and the link to eXtension is promoted on the front page of the Cornell Cooperative Extension public staff site. Currently 306 staff are registered active users of eXtension, 43 of which are faculty members. Staff have cited the usefulness of COPs - particularly where there are identified national projects - such as with Financial Security for All COP.

Examples of involvement include: Katherine Baildon, a member of the Applied Economics and Management Unit at Cornell leads the **Healthy Food Choices in Schools** Community of Practice; Jeff Piestrak, Outreach Specialist for Mann Library at Cornell is serving as a fellow on a short-term research project around **data structures for foodsystems and Extension practices**; and Paul Curtis, Associate Professor in the Department of Natural Resources is a teacher in the eXtension course **National Wildlife Control Training Program**.

In 2015, more than 800 questions from NY residents were answered through our Ask an Expert system, thanks to 15 NY State specialists and 103 out-of-state specialists, agents and volunteers who use the system.

Examples of participation in COPs in this plan of work area include:

- Childhood Obesity and Nutrition
- Community Nutrition Network Educators
- Creating Healthy Communities
- Families, Food, and Fitness
- Families & Child Well-Being Learning Network
- Food Safety
- Healthy Food Choices in Schools

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	337878	4357207	387517	4997341

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

**Patent Applications Submitted**

Year: 2015  
 Actual: 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2015	Extension	Research	Total
<b>Actual</b>	7	307	314

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- {No Data Entered}

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	(4.1d1) of children and youth who demonstrate knowledge or skill gains related to healthy eating and active living
2	(4.1g) # of youth program participants documented to have applied healthy eating and/or active living, recommendations
3	(4.1h) # of adult program participants documented to have applied healthy eating and/or active living, recommendations
4	(4.2c) # of program participants who adopt food resource management and/or food security practices
5	(4.2d) # of program participants documented to have improved food resource management and/or food security
6	(4.3c) # of program participants documented to have increased involvement in public/community childhood obesity prevention actions
7	(4.3d) # of participating schools and/or communities documented to have made practice and/or policy changes to promote healthy eating and active living
8	(4.1d2) # parents/caregivers and other adults who demonstrate knowledge or skill gains related to healthy eating and active living
9	(4.4e) # of program participants who have acted to improve their food security status.
10	(4.4f) # of community action plans implemented as a result of community based assessment.
11	(4.4g) # of individuals or households documented to have improved food security status.
12	(4.5b) # of consumers who demonstrate knowledge or skill gains related to reducing food safety and/or foodborne risks and illnesses including recommended purchasing, handling, storage, and preparation practices
13	(4.5c) # of consumers documented to have implemented new and/or increased application of ongoing safe food purchasing, handling, storage, and preparation practices.
14	(4.6c) # 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.
15	(4.7c) # of communities/ firms/or organizations documented to have assessed practices or food safety policies as a result of participating in relevant educational programs.
16	(4.7d) # of communities/ firms/or organizations documented to have implemented improved practices or food safety policies as a result of participating in relevant educational programs.
17	Use of Social Media and Mobile Technology in Nutrition Outreach and Education (Dollahite; 2012 - 2015)

## **Outcome #1**

### **1. Outcome Measures**

(4.1d1) of children and youth who demonstrate knowledge or skill gains related to healthy eating and active living

### **2. Associated Institution Types**

- 1862 Extension
- 1862 Research

### **3a. Outcome Type:**

Change in Knowledge Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	54375

### **3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
701	Nutrient Composition of Food
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior
724	Healthy Lifestyle

## **Outcome #2**

### **1. Outcome Measures**

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

## 2. Associated Institution Types

- 1862 Extension
- 1862 Research

### 3a. Outcome Type:

Change in Action Outcome Measure

### 3b. Quantitative Outcome

Year	Actual
2015	30038

### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

**What has been done**

**Results**

## 4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food
703	Nutrition Education and Behavior
724	Healthy Lifestyle

## Outcome #3

### 1. Outcome Measures

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

### 2. Associated Institution Types

- 1862 Extension
- 1862 Research

### 3a. Outcome Type:

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	35313

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
701	Nutrient Composition of Food
703	Nutrition Education and Behavior
724	Healthy Lifestyle

**Outcome #4**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	55923

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

## Results

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food
703	Nutrition Education and Behavior

### Outcome #5

#### 1. Outcome Measures

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

#### 2. Associated Institution Types

- 1862 Extension
- 1862 Research

#### 3a. Outcome Type:

Change in Condition Outcome Measure

#### 3b. Quantitative Outcome

Year	Actual
2015	26331

#### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

**What has been done**

**Results**

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food
703	Nutrition Education and Behavior

**Outcome #6**

**1. Outcome Measures**

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

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	224

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
703	Nutrition Education and Behavior
724	Healthy Lifestyle

**Outcome #7**

**1. Outcome Measures**

(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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	49

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
701	Nutrient Composition of Food
703	Nutrition Education and Behavior
724	Healthy Lifestyle

**Outcome #8**

**1. Outcome Measures**

(4.1d2) # parents/caregivers and other adults who demonstrate knowledge or skill gains related to healthy eating and active living

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	74192

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
701	Nutrient Composition of Food
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior
724	Healthy Lifestyle

**Outcome #9**

**1. Outcome Measures**

(4.4e) # of program participants who have acted to improve their food security status.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	13063

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
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**Outcome #10**

**1. Outcome Measures**

(4.4f) # of community action plans implemented as a result of community based assessment.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	14

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
702	Requirements and Function of Nutrients and Other Food Components

**Outcome #11**

**1. Outcome Measures**

(4.4g) # of individuals or households documented to have improved food security status.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2015	5923

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components

**Outcome #12**

**1. Outcome Measures**

(4.5b) # of consumers who demonstrate knowledge or skill gains related to reducing food safety and/or foodborne risks and illnesses including recommended purchasing, handling, storage, and preparation practices

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2015	21278

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
703	Nutrition Education and Behavior
724	Healthy Lifestyle

**Outcome #13**

**1. Outcome Measures**

(4.5c) # of consumers documented to have implemented new and/or increased application of ongoing safe food purchasing, handling, storage, and preparation practices.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	16228

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
502	New and Improved Food Products
703	Nutrition Education and Behavior

**Outcome #14**

**1. Outcome Measures**

(4.6c) # 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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2015	215

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
502	New and Improved Food Products
703	Nutrition Education and Behavior
724	Healthy Lifestyle

**Outcome #15**

**1. Outcome Measures**

(4.7c) # of communities/ firms/or organizations documented to have assessed practices or food safety policies as a result of participating in relevant educational programs.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	10157

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior

**Outcome #16**

**1. Outcome Measures**

(4.7d) # 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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior
724	Healthy Lifestyle

**Outcome #17**

**1. Outcome Measures**

Use of Social Media and Mobile Technology in Nutrition Outreach and Education (Dollahite; 2012 - 2015)

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

In 2012, more than one third of children and adolescents were overweight or obese. The prevalence of child obesity has prompted interventions to increase awareness and improve family health. Unfortunately, this growing need is often at odds with the limitations of long-term, in-person contact with extension program participants. Electronic communications by text message or social media are enticing and cost effective options with potential to increase the frequency and effectiveness of messaging. This study piloted a new electronic component to existing Cooperative Extension nutrition education programs (EFNEP and SNAP-Ed).

### What has been done

National data indicates that while the "digital divide" is shrinking, socio-economic factors continue to affect internet access and usage. Dollahite and her team designed a survey- and focus group-based study to determine the feasibility of delivering health, nutrition, and physical activity information to low-income parents in the EFNEP and SNAP-Ed nutrition programs. They surveyed 1640 program participants and conducted 9 focus groups across a variety of geographies, urban and rural locations, and ethnic groups to determine interest in receiving nutrition information post-graduation and their preferred delivery methods.

### Results

The survey and focus group results overwhelmingly revealed that participants were interested in receiving ongoing communication after graduation. Participants reported having access to text messages and social media, and they were largely familiar with social networking sites. They placed high value on the reliability of CCE-developed materials and suggested a wide range of topics, including healthy recipes and smart shopping tips. Facebook was their preferred method of communication, so the "Adopting Healthy Habits" page was developed for communication with graduates. In the first three months, the average post "reach" rose by 198%, and the number of page "likes" increased by 136%, both indicators that the page is active, growing, and valued by participants. The social media enhancement extends the reach and increases the impact of nutritional programs by fostering an informative and supportive community outside of the courses.

## 4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle
903	Communication, Education, and Information Delivery

## V(H). Planned Program (External Factors)

### External factors which affected outcomes

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

### Brief Explanation

The scope and scale of outcomes is greatly enhanced by augmenting Federal Capacity Funds with external sources of support. However, external grant funds may only support certain activities or aspects of this plan. Local governments, an important funding source 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.

Pockets of high unemployment in the state affect how public and private funds are allocated to address community needs. In some instances, family subsistence will be a

higher priority than improved nutrition and physical activity behaviors, or improved access to healthy food and activity opportunities. As an example of the latter, in New York State, cost cutting proposals include closing some public parks and reducing recreational physical activity programs. In addition, 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 the family, disregarding policy, system, and environmental influences outside the family.

## **V(I). Planned Program (Evaluation Studies)**

### **Evaluation Results**

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 are expected to provide comprehensive assessment. We work towards this goal by doing two things - professional development to enhance evaluation capacity of our system and collecting quantitative and qualitative documentation of local, regional and statewide programs.

**Evaluation Capacity Building:** Cornell Cooperative Extension has worked with the Cornell Office of Research on Evaluation (CORE) to strengthen evaluation practice and build evaluation capacity. CORE developed The Systems Evaluation Protocol that takes programs from logic models (columnar) to pathway models (visual) and helps to create an evaluation strategy. CORE tested and refined The Systems Evaluation Protocol in partnership with CCE programs from 2006 - 2015. The Protocol has been integrated into professional development in CCE, to promote consistent approaches to evaluation of county-based, regional, and statewide programs. Although the formal project connection with CORE ended in 2015, access to the Netway and online training continue to be available.

**Regional/Statewide documentation examples.** Many of our regional and statewide programs are receiving federal capacity funds. Documentation of outcomes is a requirement of funding. Results shape future program efforts and impact program design. **An example evaluation practice can be found below.**

**There is also a requirement for our local and regional programs to report on statewide outcomes/indicators:** Program documentation results are aggregated in a statewide accountability database that includes both qualitative and quantitative data for reporting and helping us to better understand impacts. Quantitative system wide outcome data is reported in the outcome portion of this report.

### **Key Items of Evaluation**

#### **Sample Program Evaluation:**

From Choose Health: Food, Fun, and Fitness (CHFFF), a research-based, experiential learning curriculum for 8-12 year olds, targeting important behaviors for preventing childhood obesity and chronic disease - use of a delayed intervention design and pre-post surveys.

Evaluation was implemented in New York City and 4 rural counties to study the program reach of CHFFF. Six experienced educators were selected, provided with training on the curriculum/fidelity, and received in-depth training on the protocol. Data collection

occurred November - June. The evaluation used a delayed intervention design - youth completed the evaluation questionnaire at baseline, a control period of no intervention, just before, and just after they received six weekly lessons. The 20-minute questionnaire was based on a literature review, test questions used in practice-based studies, expert review, and cognitive testing of questions. Each question was read aloud by the educator, following a script with standardized prompts/answers to potential questions. Educators completed a form to document fidelity and changes or omissions, and supervisors observed at least one session for each lesson/settings. All lessons included a food tasting and an active game. A personalized weekly newsletter about the lesson topic and with the tasted recipe was sent home with each child.

The final sample included 960 youth reached through 28 after-school and 28 school classroom groups; of these a total of 582 youth completed all three surveys. The surveys have been entered (with dual entry for a subsample of surveys to check for data entry errors). Some initial data cleaning and preliminary analyses have been done, but final results are not yet available.

Four practice-based evidence studies were also completed. Two were based on the standard national EFNEP pre-post surveys, one in 3rd-5th graders (n=5636), and one in 6th-8th graders (n=1747). These included all youth receiving CHFFF in NYS through EFNEP or SNAP-Ed in FY14 and 15. Two other studies were based on a different small set of additional CHFFF-specific questions added to the standard 3rd-5th grade survey during spring/summer 2014 (n=686) and Feb-Sept 2015 (n=954).

Evidence showed 3rd-5th graders significantly increased their self-reported frequency of eating vegetables/fruit, choosing healthy snacks, drinking water, reading nutrition facts/labels, talking to their family about healthy eating, trying a new food, physical activity, and decreased frequency of drinking sweetened drinks. They also increased their willingness to ask their family to buy: a new vegetable/fruit or non-fat/ 1% milk. Sixth-8th graders significantly increased their: self-reported frequency of vegetable, fruit, whole grains, and low-fat milk consumption, frequency of making healthy choices when eating out, physical activity level, confidence in following a recipe and using measuring cups and spoons, and in how often they wash vegetables and fruits before eating them. They also decreased their frequency of sweetened drinks consumption and screen time.

[https://fnec.cornell.edu/Our\\_Initiatives/CHFFF.cf](https://fnec.cornell.edu/Our_Initiatives/CHFFF.cf)

**V(A). Planned Program (Summary)**

**Program # 5**

**1. Name of the Planned Program**

4-H Youth Development/Children, Youth and Families

Reporting on this Program

**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%		0%	
134	Outdoor Recreation	1%		12%	
511	New and Improved Non-Food Products and Processes	3%		0%	
607	Consumer Economics	7%		0%	
608	Community Resource Planning and Development	15%		0%	
610	Domestic Policy Analysis	4%		0%	
801	Individual and Family Resource Management	8%		0%	
802	Human Development and Family Well-Being	12%		54%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	7%		0%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	4%		22%	
805	Community Institutions, Health, and Social Services	6%		0%	
806	Youth Development	30%		12%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Inputs)**

1. Actual amount of FTE/SYs expended this Program

**Cornell University**

Year: 2015	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	287.0	0.0	3.0	0.0
<b>Actual Paid</b>	385.0	0.0	4.0	0.0

<b>Actual Volunteer</b>	24340.0	0.0	0.0	0.0
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**NY State Agricultural Experiment Station**

Year: 2015	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	287.0	0.0	3.0	0.0
<b>Actual Paid</b>	0.0	0.0	0.0	0.0
<b>Actual Volunteer</b>	0.0	0.0	0.0	0.0

2. **Institution Name:** Cornell University

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
3087742	0	385053	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
3087742	0	815723	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	0	0

2. **Institution Name:** NY State Agricultural Experiment Station

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
0	0	0	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	0	0

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

**Youth:** 4-H Youth Development is a comprehensive, statewide positive youth development program. 4-H entails a wide variety of applied research and educational methods based on need and local context. Campus-based faculty and Extension Associates, Program Work Teams (PWTs), State Office staff, the

New York State Association of CCE 4-H Educators (NYSACCE4-HE), county-based educators, volunteers, and youth leaders are all involved in designing, implementing, and evaluating program efforts.

NYS 4-H's first priority is to create a safe, inclusive space for learning, sharing, and collaboration welcoming to people from diverse backgrounds, cultures and perspectives. A 4-H Learning Experience is an active, reflective learning and growing process where young people, connected in transformative relationships with educators and each other, engage in progressive learning pathways in the dynamic ecology of positive youth development. Young people participate in a variety of 4-H Learning Experiences through 4-H projects. A project is a planned series of experiential learning opportunities that focuses on a particular topic area and learning goals over a period of time. 4-H Learning Experiences includes a wide array of delivery modes, ways of learning, project and topic areas, and local adaptations. All young people who participate in a 4-H Learning Experience are considered members. Members may participate in one or several 4-H Learning Experiences, through one or many delivery modes and in one or many project areas. They may join for a short-term experience or remain involved for several years.

Through their 4-H Learning Experiences, youth develop understanding, practical skills, life skills, contribute to their community, and explore their sparks. A spark is a special quality, skill, or interest that a young person is passionate about and is a source of meaning and purpose. 4-H Learning Experiences, projects, and programs aim to support young people as they develop the 6 Cs: caring, character, confidence, competence, connection, and contribution.

A variety of educational strategies are also used to support county educators and volunteers. Professional development goals include assisting colleagues in gaining the knowledge and skills necessary to assess the ranges of possibilities that exist within and among program areas. Trained 4-H educators and staff, volunteers, youth, schoolteachers, community agency staff and others lead youth in 4-H projects.

**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 (as well as state-wide) educational efforts depending on the focus and scope of their role.

### **Sample Statewide Program Initiatives that fall within this Plan of Work:**

- 4-H Youth Development Program (clubs, events, camps, afterschool, school enrichment)
- 4-H and NYS Library Partnership
- 4-H National Mentoring Program
- ACT (Assets Coming Together) for Youth
- 4-H Public Presentations
- Children, Youth, and Families at Risk Program (CYFAR)
- Cornell Early Childhood Program
- Cornell Research Program on Self-Injurious Behavior
- Design & Environmental Analysis: knowledge, ideas, and designs that contribute to improving the places in which we work, live, learn, heal, and play
  - Events: 4-H Career Explorations Conference, State Teen Action Representative Retreat (STARR), National 4-H Conference, Dairy Discovery Days, Animal Crackers, Public Presentations, State Fair, etc.
  - Family Economics and Resource Management
  - Operation Military Kids
  - Parenting in Context Initiative
  - Role of Grandparents in the Lives of Adolescent Grandchildren
  - Volunteer development opportunities and events

## **2. Brief description of the target audience**

## Youth

- Young people ages 5-19: Cloverbuds (5-8), pre-teens (9-12), and teens (13-19)
- Youth development educators, staff, and volunteers
- Families, parents, and guardians
- Youth-serving organizations
- Teachers and schools (elementary, middle, high school)
- Community leaders
- Underserved communities (Black, Latino, Native American, Asian youth).

## Family

- Parents, grandparents and other caregivers
- Child care providers
- Community stakeholders such as employers, leaders and policy makers at local/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

### 3. How was eXtension used?

Cornell Cooperative Extension supports and promotes eXtension communities of practice, the eXtension public site and the professional development offered through eXtension.org. Staff across the state are encouraged to be involved in appropriate COPs, and the link to eXtension is promoted on the front page of the Cornell Cooperative Extension public staff site. Currently 306 staff are registered active users of eXtension, 43 of which are faculty members. Staff have cited the usefulness of COPs - particularly where there are identified national projects - such as with Financial Security for All COP.

Examples of involvement include: Katherine Baildon, a member of the Applied Economics and Management Unit at Cornell leads the **Healthy Food Choices in Schools** Community of Practice; Jeff Piestrak, Outreach Specialist for Mann Library at Cornell is serving as a fellow on a short-term research project around **data structures for food systems and Extension practices**; and Paul Curtis, Associate Professor in the Department of Natural Resources is a teacher in the eXtension course **National Wildlife Control Training Program**.

In 2015, more than 800 questions from NY residents were answered through our Ask an Expert system, thanks to 15 NY State specialists and 103 out-of-state specialists, agents and volunteers who use the system.

### Examples of participation in COPs in this plan of work area include:

- Citizen Science
- Citizenship Mission Mandate Team
- College Preparation
- Community and Youth Gardens
- CYFAR
- Delinquency Prevention Through Extension
- Diversity, Equity and Inclusion
- Family & Child Well-Being Network
- Family Care Giving
- Financial Security for All

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- Just in Time Parenting
- Military Families
- Teen Leadership
- Volunteerism
- Well-Being of Vulnerable Populations
- Youth Agriculture
- Youth Geospatial Technology

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	120779	1824127	356306	5381296

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

**Patent Applications Submitted**

Year: 2015  
 Actual: 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2015	Extension	Research	Total
<b>Actual</b>	0	12	12

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- {No Data Entered}

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	(5.1f) number of youth participants who demonstrate ability to express their ideas confidently and competently.
2	(5.1g) number of adult volunteers documented to mentor and advise youth and other adult volunteers in an effective and positive manner.
3	(5.1h) number of youth participants documented as serving in age-appropriate leadership roles.
4	(5.1i) increased number of youth organizations/programs documented as incorporating youth voice to reflect youth needs, interests, and excitement for learning in programming.
5	(5.2d) number of participants demonstrating increased awareness of STEM, improved STEM skills including scientific methods, knowledge of specific sciences, and/or increased awareness of opportunities to contribute to society using STEM skills.
6	(5.2e) number of participants that report improved success in school achievement or have been observed to improve academic improvement, success in school science and/or increased interest in STEM.
7	(5.2f) number of youth applying STEM learning to contexts outside 4-H programs, e.g., school classes, science fairs, invention contests, etc.
8	(5.2g) number of youth expressing interest/demonstrating aspirations towards STEM careers, e.g., career fairs, job shadowing, volunteer work or internships.
9	(5.2h) number of youth adopting and using new scientific methods or improved technology.
10	(5.4e) number of participating infant and child caregivers reporting to have applied positive care-giving practices.
11	(5.4f) number of participating persons with care-requiring dependents reporting to have used child care quality characteristics in their care selection.
12	(5.4g)) number of participating persons with care-requiring dependents reporting positive change in child care as a result of participating in educational programs.
13	(5.5c) number of program participants reporting to have been involved in community level assessments of family care needs.
14	(5.5d) number of communities documented to have taken action to address family needs that can be related to educational programs and/or critical community collaborations provided.
15	(5.6c) number of parents and other adults providing parental care adopting development-ally appropriate and effective parenting methods.
16	(5.6d) number of 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.
17	(5.7c) number 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.
18	(5.7d) number of program participants reporting to have met day-to-day financial obligations while also progressing on future goals for home ownership, savings, retirement accounts, etc.
19	(5.7e) number of program participants reporting to have reduced debts and/or increased savings.
20	(5.8c) number of program participants documented to have taken measures to prevent or remediate indoor air quality issues.
21	(5.3f) number of youth documented to have practiced life skills in authentic decision-making partnerships with adults as a result of participating in the program.
22	(5.3g) number 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.
23	(5.3h) number 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.
24	Promoting Healthy Decision-making in Adolescence Using Gist-based Curricula (Reyna; 2012 - 2015)

**Outcome #1**

**1. Outcome Measures**

(5.1f) number of youth participants who demonstrate ability to express their ideas confidently and competently.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2015	39324

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

## Results

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

### Outcome #2

#### 1. Outcome Measures

(5.1g) number of adult volunteers documented to mentor and advise youth and other adult volunteers in an effective and positive manner.

#### 2. Associated Institution Types

- 1862 Extension
- 1862 Research

#### 3a. Outcome Type:

Change in Action Outcome Measure

#### 3b. Quantitative Outcome

Year	Actual
2015	6432

#### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

**What has been done**

**Results**

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

**Outcome #3**

**1. Outcome Measures**

(5.1h) number of youth participants documented as serving in age-appropriate leadership roles.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	11109

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
806	Youth Development

**Outcome #4**

**1. Outcome Measures**

(5.1i) increased number of youth organizations/programs documented as incorporating youth voice to reflect youth needs, interests, and excitement for learning in programming.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	8422

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
805	Community Institutions, Health, and Social Services
806	Youth Development

**Outcome #5**

**1. Outcome Measures**

(5.2d) number of participants demonstrating increased awareness of STEM, improved STEM skills including scientific methods, knowledge of specific sciences, and/or increased awareness of opportunities to contribute to society using STEM skills.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	85018

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
806	Youth Development

**Outcome #6**

**1. Outcome Measures**

(5.2e) number of participants that report improved success in school achievement or have been observed to improve academic improvement, success in school science and/or increased interest in STEM.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	37525

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
806	Youth Development

**Outcome #7**

**1. Outcome Measures**

(5.2f) number of youth applying STEM learning to contexts outside 4-H programs, e.g., school classes, science fairs, invention contests, etc.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	30323

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
806	Youth Development

**Outcome #8**

**1. Outcome Measures**

(5.2g) number of youth expressing interest/demonstrating aspirations towards STEM careers, e.g., career fairs, job shadowing, volunteer work or internships.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	13335

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
806	Youth Development

**Outcome #9**

**1. Outcome Measures**

(5.2h) number of youth adopting and using new scientific methods or improved technology.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	23301

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

## Results

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

### Outcome #10

#### 1. Outcome Measures

(5.4e) number of participating infant and child caregivers reporting to have applied positive care-giving practices.

#### 2. Associated Institution Types

- 1862 Extension
- 1862 Research

#### 3a. Outcome Type:

Change in Action Outcome Measure

#### 3b. Quantitative Outcome

Year	Actual
2015	3769

#### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

**What has been done**

**Results**

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
805	Community Institutions, Health, and Social Services
806	Youth Development

### **Outcome #11**

#### **1. Outcome Measures**

(5.4f) number of participating persons with care-requiring dependents reporting to have used child care quality characteristics in their care selection.

#### **2. Associated Institution Types**

- 1862 Extension
- 1862 Research

#### **3a. Outcome Type:**

Change in Action Outcome Measure

#### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	505

#### **3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

#### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
802	Human Development and Family Well-Being
805	Community Institutions, Health, and Social Services
806	Youth Development

### **Outcome #12**

#### **1. Outcome Measures**

(5.4g)) number of participating persons with care-requiring dependents reporting positive change in child care as a result of participating in educational programs.

#### **2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	946

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
802	Human Development and Family Well-Being
805	Community Institutions, Health, and Social Services
806	Youth Development

**Outcome #13**

**1. Outcome Measures**

(5.5c) number of program participants reporting to have been involved in community level assessments of family care needs.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
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**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services
806	Youth Development

**Outcome #14**

**1. Outcome Measures**

(5.5d) number 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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	228

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

#### 4. Associated Knowledge Areas

<b>KA Code</b>	<b>Knowledge Area</b>
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services
806	Youth Development

#### Outcome #15

##### 1. Outcome Measures

(5.6c) number of parents and other adults providing parental care adopting development-ally appropriate and effective parenting methods.

##### 2. Associated Institution Types

- 1862 Extension
- 1862 Research

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

<b>Year</b>	<b>Actual</b>
2015	1573

##### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

**What has been done**

**Results**

#### 4. Associated Knowledge Areas

<b>KA Code</b>	<b>Knowledge Area</b>
802	Human Development and Family Well-Being
806	Youth Development

**Outcome #16**

**1. Outcome Measures**

(5.6d) number of 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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	3133

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
802	Human Development and Family Well-Being
806	Youth Development

**Outcome #17**

**1. Outcome Measures**

(5.7c) number 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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	372

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
607	Consumer Economics
801	Individual and Family Resource Management

**Outcome #18**

**1. Outcome Measures**

(5.7d) number of program participants reporting to have met day-to-day financial obligations while also progressing on future goals for home ownership, savings, retirement accounts, etc.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	138

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
607	Consumer Economics
801	Individual and Family Resource Management

**Outcome #19**

**1. Outcome Measures**

(5.7e) number of program participants reporting to have reduced debts and/or increased savings.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	133

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
607	Consumer Economics
801	Individual and Family Resource Management

**Outcome #20**

**1. Outcome Measures**

(5.8c) number of program participants documented to have taken measures to prevent or remediate indoor air quality issues.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	97

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
607	Consumer Economics
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

**Outcome #21**

**1. Outcome Measures**

(5.3f) number of youth documented to have practiced life skills in authentic decision-making partnerships with adults as a result of participating in the program.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	29533

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
608	Community Resource Planning and Development
806	Youth Development

**Outcome #22**

**1. Outcome Measures**

(5.3g) number 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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
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### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

**What has been done**

**Results**

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
806	Youth Development

### Outcome #23

#### 1. Outcome Measures

(5.3h) number 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. Associated Institution Types

- 1862 Extension
- 1862 Research

#### 3a. Outcome Type:

Change in Condition Outcome Measure

#### 3b. Quantitative Outcome

Year	Actual
2015	8071

### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

**What has been done**

**Results**

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
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608 Community Resource Planning and Development  
806 Youth Development

## **Outcome #24**

### **1. Outcome Measures**

Promoting Healthy Decision-making in Adolescence Using Gist-based Curricula (Reyna; 2012 - 2015)

### **2. Associated Institution Types**

- 1862 Extension
- 1862 Research

### **3a. Outcome Type:**

Change in Action Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	0

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

Adolescents take more risks than other age groups, often resulting in preventable and sometimes tragic consequences. To reduce unhealthy or unsafe behaviors, a new approach to intervention that recognizes how adolescents learn, reason, and make decisions is needed. Traditional educational programs tend to rely on quantitative information, such as statistics and probabilities, and have had limited success in reducing risky teenage behavior. Reyna and her team propose the addition of gist-based information, which provides an essential, bottom line message and is more qualitative and intuitive than a strictly verbatim approach.

#### **What has been done**

This project tested and refined gist-based interventions designed to reduce obesity, pregnancy, and sexually transmitted infections (STIs). In preliminary studies, both of the existing obesity and pregnancy/STI curricula were shown to produce positive behavioral changes in participants. Reyna and her team made key changes to the programs, adding gist-based information in an effort to improve learning and retention by fostering an intuitive, rather than a calculative approach to decision-making. They tested these "gist-enhanced" courses against a control curriculum to confirm the effectiveness of the modifications.

#### **Results**

Results based on the over 300 students who completed instructional coursework and post-testing indicated that the gist-enhanced curriculum was effective in increasing subject knowledge compared to a traditional curriculum. Findings further suggested that emphasizing bottom-line meaning, rather than detailed facts, has a stronger likelihood of reducing risk-taking behaviors.

The team was able to identify specific health messages of nutrition and fitness knowledge that are most predictive of healthy eating and exercise habits. Reyna's group has extended their results to a larger audience by developing the enhanced EatFit curriculum into a web-based tutorial called GistFit. These encouraging results mean that updating traditional curricula with gist-based lessons can help youth develop healthier strategies for approaching risky decisions and could be used to strengthen the impacts and outcomes of other programs around the country.

#### 4. Associated Knowledge Areas

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

#### V(H). Planned Program (External Factors)

##### External factors which affected outcomes

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

##### Brief Explanation

###### Youth

Fiscal pressures internal to Extension and among community organizations influence the scope and quality of programming available to youth. The increasing diversity of our populations creates the need for an array of program materials, strategies, and a dedication to multicultural competencies. Changing educational standards influence the acceptability or credibility of existing curricula. Regional and community demographic differences influence both program strategies and professional development needs.

###### Family

The economic, political and governmental sectors affect the quality, availability and accessibility of childcare. The growth of aging and minority populations in the US means more diverse cultures and values related to parenting, childcare, 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, energy and indoor air quality matters.

#### V(I). Planned Program (Evaluation Studies)

##### Evaluation Results

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 are expected to provide comprehensive assessment. We work towards this goal by doing two things - professional development to enhance evaluation capacity of our system and collecting quantitative and qualitative documentation of local, regional and statewide programs.

**Evaluation Capacity Building:** Cornell Cooperative Extension has worked with the Cornell Office of Research on Evaluation (CORE) to strengthen evaluation practice and build evaluation capacity. CORE developed The Systems Evaluation Protocol that takes programs from logic models (columnar) to pathway models (visual) and helps to create an evaluation strategy. CORE tested and refined The Systems Evaluation Protocol in partnership with CCE programs from 2006 - 2015. The Protocol has been integrated into professional development in CCE, to promote consistent approaches to evaluation of county-based, regional, and statewide programs. Although the formal project connection with CORE ended in 2015, access to the Netway and online training continue to be available.

**Regional/Statewide documentation examples.** Many of our regional and statewide programs are receiving federal capacity funds. Documentation of outcomes is a requirement of funding. Results shape future program efforts and impact program design. **An example evaluation practice can be found below.**

**There is also a requirement for our local and regional programs to report on statewide outcomes/indicators:** Program documentation results are aggregated in a statewide accountability database that includes both qualitative and quantitative data for reporting and helping us to better understand impacts. Quantitative system wide outcome data is reported in the outcome portion of this report.

## Key Items of Evaluation

### Sample Program Evaluation:

From the Parenting In Context program - use of pre-post survey

The Parenting In Context CCE statewide program has 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 for statewide use. This information now feeds into our State Defined Outcomes related to parenting education.

The Cornell Cooperative Extension (CCE) system offers a variety of programs for parents and caregivers. These programs reach a wide range of families and seek to promote positive parenting and, ultimately, healthy family and child development. Data were collected from CCE parent education program participants between July 2014 to July 2015 at the first session (a pre-test) and at the last session (a post-test). Participants included parents and caregivers taking part in programs that comprised at least six hours of content delivery.

### Demographics of Participants in CCE Parent Education Programs

A total of thirteen parent education programs were evaluated. The largest number of participants took part in Parenting Skills Workshop Series (PSWS) (23% of all participants) and the Discipline Is Not A Dirty Word program (21%).

The majority (71%) of participants in parent education classes were female. The highest level of educational attainment reached among the participants varied widely, with the greatest number of participants reaching 12th grade or a GED (23%) followed by those having attended, but not graduated from, college (18%). The vast majority of the participants in parent education classes were white (70%), and 48% of the participants were married or partnered.

### **Pre-Post Survey Results**

This study used a pre- and post-test evaluation, in which the participants were asked to answer two identical surveys--one given at the first session of the class and another given after the completion of the last parenting class. The survey included ten questions about parenting attitudes, behaviors, and knowledge. The pre/post study design allows researchers to see if participants' attitudes, behaviors, and knowledge change during the course of the parenting programs. Using this type of research design does not allow one to determine whether taking part in the parent education class caused a change in knowledge, attitude or behaviors; such changes could occur for other reasons outside of the program. However, it is possible that any significant pre-to-post changes in parenting attitudes, behaviors and knowledge that are observed may have resulted from taking part in the program.

The following evaluation is based on information provided by 370 participants, who completed a parent education program and completed both a pre- and a post-test survey. All ten items on the survey showed significant improvements from the pre- to the post-test. Specifically, CCE parent education participants reported increases in: patience with their child, making rules that take their child's needs into consideration, having the skills necessary to be a good caregiver, explaining reasons for rules, physical affection towards their child, communicating something positive about their child with other adults, time spent reading with their child and having enough people to count on.

A p-value generated from a paired t-test was used as a statistical measure to determine whether a change in a given survey question between the pre- and post-test was significant. A p-value of .10 or less was considered statistically significant. This means that we can say with 90% certainty that the pre-to-post changes in participant responses are not due to chance.

These results indicate that ten out of ten measures of parenting attitudes, behaviors and knowledge improved significantly from the pre- to the post-test. This suggests that, across the state, CCE parent education programs may have had a positive impact on their participants.

<http://www.human.cornell.edu/pam/outreach/parenting/>

**V(A). Planned Program (Summary)**

**Program # 6**

**1. Name of the Planned Program**

Community and Economic Vitality

Reporting on this Program

**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	25%		17%	
134	Outdoor Recreation	5%		0%	
602	Business Management, Finance, and Taxation	5%		3%	
608	Community Resource Planning and Development	45%		41%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	10%		21%	
805	Community Institutions, Health, and Social Services	10%		18%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Inputs)**

1. Actual amount of FTE/SYs expended this Program

**Cornell University**

Year: 2015	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	99.7	0.0	1.5	0.0
<b>Actual Paid</b>	127.0	0.0	3.0	0.0
<b>Actual Volunteer</b>	4458.0	0.0	0.0	0.0

**NY State Agricultural Experiment Station**

Year: 2015	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	99.7	0.0	1.5	0.0
<b>Actual Paid</b>	0.0	0.0	0.0	0.0
<b>Actual Volunteer</b>	0.0	0.0	0.0	0.0

**2. Institution Name:** Cornell University

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1022439	0	222059	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1022439	0	382244	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

**2. Institution Name:** NY State Agricultural Experiment Station

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

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

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

CCE, CUAES and NYSAES have a commitment to the people of New York to build self-capacity among citizens, leaders, and local officials so they are better positioned to address challenges and opportunities, improve quality of life, and build strong and vibrant communities. Through integrated research and extension agendas, we can help develop effective and collaborative agriculture, energy, emergency management, and 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 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.

Sample Statewide/Regional Initiatives that fall within this Plan of Work

- Agriculture and Food Systems Development: Community and Economy
- Community and Energy

- Leadership Development
- Workforce Development
- Community Capacity Building
- Land Use Education
- Regional Economic Development
- Sustainable and Resilient Communities
- Training for Local Officials
- Entrepreneurship
- New York Extension Disaster Education Network (NY EDEN)
- Master Gardener Volunteer Program

## 2. Brief description of the target audience

- Elected officials, community leaders, business and economic leaders, not-for-profit 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
- Workforce development specialists

## 3. How was eXtension used?

Cornell Cooperative Extension supports and promotes eXtension communities of practice, the eXtension public site and the professional development offered through eXtension.org. Staff across the state are encouraged to be involved in appropriate COPs, and the link to eXtension is promoted on the front page of the Cornell Cooperative Extension public staff site. Currently 306 staff are registered active users of eXtension, 43 of which are faculty members. Staff have cited the usefulness of COPs - particularly where there are identified national projects - such as with Financial Security for All COP.

Examples of involvement include: Katherine Baildon, a member of the Applied Economics and Management Unit at Cornell leads the **Healthy Food Choices in Schools** Community of Practice; Jeff Piestrak, Outreach Specialist for Mann Library at Cornell is serving as a fellow on a short-term research project around **data structures for food systems and Extension practices**; and Paul Curtis, Associate Professor in the Department of Natural Resources is a teacher in the eXtension course **National Wildlife Control Training Program**.

In 2015, more than 800 questions from NY residents were answered through our Ask an Expert system, thanks to 15 NY State specialists and 103 out-of-state specialists, agents and volunteers who use the system.

Examples of participation in COPs in this plan of work area include:

- Community Management Board
- Community, Local & Regional Food Systems
- Creating Healthy Communities
- Diversity, Equity and Inclusion
- Enhancing Rural Capacity
- Entrepreneurs and Their Communities
- Extension Disaster Education Network
- Extension Master Gardener Coordinators

- Financial Security for All
- Land Use Planning
- Map@Syst
- Managing in Tough Times
- Public Deliberation
- Tourism & Recreation
- Well-Being of Vulnerable Populations
- Wildlife Damage Management

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	306554	9009886	48418	1423043

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

**Patent Applications Submitted**

Year: 2015  
 Actual: 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2015	Extension	Research	Total
<b>Actual</b>	40	327	367

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- {No Data Entered}

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	(6.1f) number of communities who plan for and implement initiatives on community based agricultural economic development, land use, energy, workforce development, business and entrepreneurial development and assistance, non-profit sector development and/or other elements of sustainable growth.
2	(6.1g) number of residents and/or community leaders, who plan for and initiate steps to enhance facilities, and/or other community resources or services
3	(6.1j) number of communities establishing an infrastructure and climate to support entrepreneurs, local farms and agribusinesses attributable at least in part to initiatives of the program.
4	(6.1k) number of communities documenting improvements in facilities and/or other community resources or services.
5	(6.2c) number of communities instituting new or enhanced participatory processes related to economic development
6	(6.2e) number 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.
7	(6.3c) number of communities and municipalities that address the connection between their land base and possible energy scenarios
8	(6.3d) number of sustainability initiatives adopted
9	(6.3e) number of communities that incorporate energy use and development in their comprehensive plans
10	(6.4c) number of community leaders documented to apply community economic development and quality of life indicators to support decision-making.
11	(6.4d) of communities implementing projects that enhance community sustainability and/or protect public health and community well-being through sound environmental management
12	(6.5a) # of municipalities adopting land use planning tools that incorporate environmental dimensions and/or develop new institutional arrangements to support land use planning and environmental management.
13	(6.5b) # of communities adopting or updating farmland preservation and/or agricultural economic development plans
14	(6.6b) # of residents and/or community leaders, who plan for and initiate steps to enhance public spaces
15	(6.6c) # of new or enhanced community organizations or networks linking diverse sub-groups and focused on enhancing community sustainability.
16	(6.6d) # of communities documenting improvements in public spaces.
17	(6.7c) number of instances in which producers/ horticulture businesses/ natural resource enterprises, residents and community leaders work together to address issues

18	(6.7d) number of documented instances in which agriculture/community conflicts are resolved locally.
19	(6.8e) number 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.
20	(6.8f) number of communities that initiate specific plans to address agriculture/ horticulture/ natural resource enterprise related issues or capitalize on new opportunities including community agriculture initiatives.
21	(6.8g) number of communities documented to adopt, maintain, or expand policies supportive of appropriate agriculture/horticulture/ natural resource enterprise development and/or community agriculture.
22	(6.9f) number of community residents practicing management tactics in residential landscapes and homes that work to sustain or enhance a healthy community and environment.
23	(6.9g) number of community residents with improved availability and access to fresh fruits and vegetables.
24	(6.9h) number of community education/demonstration food gardens established or maintained
25	Informing County-based Economic Development (ED) Decisions: A Scientific Foundation for Strategic Outreach (Brown; 2012 - 2015)

**Outcome #1**

**1. Outcome Measures**

(6.1f) number of communities who plan for and implement initiatives on community based agricultural economic development, land use, energy, workforce development, business and entrepreneurial development and assistance, non-profit sector development and/or other elements of sustainable growth.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2015	300

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
602	Business Management, Finance, and Taxation
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

**Outcome #2**

**1. Outcome Measures**

(6.1g) number of residents and/or community leaders, who plan for and initiate steps to enhance facilities, and/or other community resources or services

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	17619

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
608	Community Resource Planning and Development

**Outcome #3**

**1. Outcome Measures**

(6.1j) number 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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	160

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
602	Business Management, Finance, and Taxation
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

**Outcome #4**

**1. Outcome Measures**

(6.1k) number of communities documenting improvements in facilities and/or other community resources or services.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	215

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
608	Community Resource Planning and Development
805	Community Institutions, Health, and Social Services

**Outcome #5**

**1. Outcome Measures**

(6.2c) number of communities instituting new or enhanced participatory processes related to economic development

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	2

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
608	Community Resource Planning and Development
805	Community Institutions, Health, and Social Services

**Outcome #6**

**1. Outcome Measures**

(6.2e) number 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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	165

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
608	Community Resource Planning and Development
805	Community Institutions, Health, and Social Services

**Outcome #7**

**1. Outcome Measures**

(6.3c) number of communities and municipalities that address the connection between their land base and possible energy scenarios

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	14

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
131	Alternative Uses of Land
608	Community Resource Planning and Development

**Outcome #8**

**1. Outcome Measures**

(6.3d) number of sustainability initiatives adopted

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	220

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
131	Alternative Uses of Land
134	Outdoor Recreation
608	Community Resource Planning and Development
805	Community Institutions, Health, and Social Services

**Outcome #9**

**1. Outcome Measures**

(6.3e) number of communities that incorporate energy use and development in their comprehensive plans

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	2

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
608	Community Resource Planning and Development
805	Community Institutions, Health, and Social Services

**Outcome #10**

**1. Outcome Measures**

(6.4c) number of community leaders documented to apply community economic development and quality of life indicators to support decision-making.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	180

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

**Outcome #11**

**1. Outcome Measures**

(6.4d) of communities implementing projects that enhance community sustainability and/or protect public health and community well-being through sound environmental management

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	220

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
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608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

**Outcome #12**

**1. Outcome Measures**

(6.5a) # of municipalities adopting land use planning tools that incorporate environmental dimensions and/or develop new institutional arrangements to support land use planning and environmental management.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	5

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
131	Alternative Uses of Land
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

### **Outcome #13**

#### **1. Outcome Measures**

(6.5b) # of communities adopting or updating farmland preservation and/or agricultural economic development plans

#### **2. Associated Institution Types**

- 1862 Extension
- 1862 Research

#### **3a. Outcome Type:**

Change in Action Outcome Measure

#### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	14

#### **3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

#### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
131	Alternative Uses of Land
608	Community Resource Planning and Development

### **Outcome #14**

#### **1. Outcome Measures**

(6.6b) # of residents and/or community leaders, who plan for and initiate steps to enhance public spaces

#### **2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	13443

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
131	Alternative Uses of Land
134	Outdoor Recreation
608	Community Resource Planning and Development

**Outcome #15**

**1. Outcome Measures**

(6.6c) # of new or enhanced community organizations or networks linking diverse sub-groups and focused on enhancing community sustainability.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
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**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
131	Alternative Uses of Land
134	Outdoor Recreation
608	Community Resource Planning and Development
805	Community Institutions, Health, and Social Services

**Outcome #16**

**1. Outcome Measures**

(6.6d) # of communities documenting improvements in public spaces.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	19

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
131	Alternative Uses of Land
134	Outdoor Recreation
608	Community Resource Planning and Development
805	Community Institutions, Health, and Social Services

**Outcome #17**

**1. Outcome Measures**

(6.7c) number of instances in which producers/ horticulture businesses/ natural resource enterprises, residents and community leaders work together to address issues

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	136

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
131	Alternative Uses of Land
602	Business Management, Finance, and Taxation
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

**Outcome #18**

**1. Outcome Measures**

(6.7d) number of documented instances in which agriculture/community conflicts are resolved locally.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	14

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

**Outcome #19**

**1. Outcome Measures**

(6.8e) number 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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	40

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

**Outcome #20**

**1. Outcome Measures**

(6.8f) number 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. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	30

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
602	Business Management, Finance, and Taxation
608	Community Resource Planning and Development
805	Community Institutions, Health, and Social Services

**Outcome #21**

**1. Outcome Measures**

(6.8g) number of communities documented to adopt, maintain, or expand policies supportive of appropriate agriculture/horticulture/ natural resource enterprise development and/or community agriculture.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	191

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
602	Business Management, Finance, and Taxation
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

**Outcome #22**

**1. Outcome Measures**

(6.9f) number of community residents practicing management tactics in residential landscapes and homes that work to sustain or enhance a healthy community and environment.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	46643

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
131	Alternative Uses of Land
134	Outdoor Recreation
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and

805 Communities  
Community Institutions, Health, and Social Services

**Outcome #23**

**1. Outcome Measures**

(6.9g) number of community residents with improved availability and access to fresh fruits and vegetables.

**2. Associated Institution Types**

- 1862 Extension
- 1862 Research

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	14631

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
134	Outdoor Recreation
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

### **Outcome #24**

#### **1. Outcome Measures**

(6.9h) number of community education/demonstration food gardens established or maintained

#### **2. Associated Institution Types**

- 1862 Extension
- 1862 Research

#### **3a. Outcome Type:**

Change in Condition Outcome Measure

#### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2015	445

#### **3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

#### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
131	Alternative Uses of Land
134	Outdoor Recreation
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

### **Outcome #25**

#### **1. Outcome Measures**

Informing County-based Economic Development (ED) Decisions: A Scientific Foundation for Strategic Outreach (Brown; 2012 - 2015)

## 2. Associated Institution Types

- 1862 Extension
- 1862 Research

### 3a. Outcome Type:

Change in Action Outcome Measure

### 3b. Quantitative Outcome

Year	Actual
2015	0

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

Multiple forces have increased the significance and impact of local policy and decision-making in the United States, particularly in the realms of agriculture and food systems, land use and energy, and local responses to climate change. Research on how to enhance the effectiveness of research-based information, training, and other university resources in the decision-making processes of local policymakers is critical to support balanced and effective policy decisions.

#### What has been done

Brown and his team used case studies and focus groups to evaluate hypotheses on the important pathways of influence in the political decision-making process. A literature review on the ways that local government officials learn and distill complex information into policy informed their hypotheses. The case studies were conducted in communities that varied along socioeconomic dimensions (e.g., population size, urban-rural mix, economic growth, ethnic and racial diversity) and by county government structure.

#### Results

The group identified several influential themes that determine how or why academic research may be used in the local government decision-making process. The first focuses on the attributes of the decision, such as the level of complexity, the level of controversy, or the potential impacts. The potential pathways of influence are particularly twisted when the issue evokes deep-seated controversy. Characteristics of the decision-making body, such as legislative structure or political diversity, are also important. Attributes of individuals involved play a significant role, including their experiences and values, leadership skills, and credibility. Finally, the role of trusted campus-county intermediaries, such as CCE educators, became a focal point of the research. This project took an innovative and leading role as a foundation for land grant universities to explore critical questions surrounding the communication of research and information to policymakers.

## 4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
805	Community Institutions, Health, and Social Services

## V(H). Planned Program (External Factors)

### External factors which affected outcomes

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

### Brief Explanation

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(I). Planned Program (Evaluation Studies)

### Evaluation Results

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 are expected to provide comprehensive assessment. We work towards this goal by doing two things - professional development to enhance evaluation capacity of our system and collecting quantitative and qualitative documentation of local, regional and statewide programs.

**Evaluation Capacity Building:** Cornell Cooperative Extension has worked with the Cornell Office of Research on Evaluation (CORE) to strengthen evaluation practice and build evaluation capacity. CORE developed The Systems Evaluation Protocol that takes programs from logic models (columnar) to pathway models (visual) and helps to create an evaluation strategy. CORE tested and refined The Systems Evaluation Protocol in partnership with CCE programs from 2006 - 2015. The Protocol has been integrated into professional development in CCE, to promote consistent approaches to evaluation of county-based, regional, and statewide programs. Although the formal project connection with CORE ended in 2015, access to the Netway and online training continue to be available.

**Regional/Statewide documentation examples.** Many of our regional and statewide programs are receiving federal capacity funds. Documentation of outcomes is a requirement of funding. Results shape future program efforts and impact program design. **There**

**is also a requirement for our local and regional programs to report on statewide**

**outcomes/indicators:** Program documentation results are aggregated in a statewide accountability database that includes both qualitative and quantitative data for reporting and helping us to better understand impacts. Quantitative system wide outcome data is reported in the outcome portion of this report.

**Key Items of Evaluation**

## VI. National Outcomes and Indicators

### 1. NIFA Selected Outcomes and Indicators

<b>Childhood Obesity (Outcome 1, Indicator 1.c)</b>	
30038	Number of children and youth who reported eating more of healthy foods.
<b>Climate Change (Outcome 1, Indicator 4)</b>	
0	Number of new crop varieties, animal breeds, and genotypes with climate adaptive traits.
<b>Global Food Security and Hunger (Outcome 1, Indicator 4.a)</b>	
12010	Number of participants adopting best practices and technologies resulting in increased yield, reduced inputs, increased efficiency, increased economic return, and/or conservation of resources.
<b>Global Food Security and Hunger (Outcome 2, Indicator 1)</b>	
0	Number of new or improved innovations developed for food enterprises.
<b>Food Safety (Outcome 1, Indicator 1)</b>	
0	Number of viable technologies developed or modified for the detection and
<b>Sustainable Energy (Outcome 3, Indicator 2)</b>	
7	Number of farmers who adopted a dedicated bioenergy crop
<b>Sustainable Energy (Outcome 3, Indicator 4)</b>	
0	Tons of feedstocks delivered.