2011 Kentucky State University and University of Kentucky Combined Research and Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

Kentucky's Research and Extension efforts for 2011 reflects the work put forth by county and state level personnel in order to benefit the millions of Kentuckians throughout the state.

Some of our 2011 accomplishments include: Educational programs that relate to Science, Engineering, and Technology Initiatives in 4-H continue to evolve and grow exponentially. Over 20,000 citizens in 101 counties were involved in Second Sunday, a statewide event dedicated to getting people to increase their physical activity level; The Kentucky Extension Homemakers Association reached the $1 million mark in funds it has raised for ovarian cancer research Moneywi$e Web site at http://ces.ca.uky.edu/moneywise/ was developed, where Kentuckians can find our best resources for dealing with economic challenges. High impact educational programs such as Horse College, Master Grazer, and Master Logger resulted in significant improvements in animal nutrition, farm income, natural resources utilization. New support programs were initiated with military personnel and their dependents.

In 2011, we began incorporating an issues discovery process into the county Plan of Work process. This includes leaders and agents talking about what is needed at the county level. Those issues identified at the county level were then prioritized at the district level. Once the top issues were prioritized by program level at district forums, these issues were submitted to the state Extension Council for further discussions. We were very careful to maintain the ideas generated across the state, building programming in response to what we have heard. The issues discovery process is a dialogue made possible by our presence in all 120 counties. It is powerful, and it enables Kentucky Cooperative Extension and Research Programs to stay relevant and of value to our stakeholders. It is our pledge to use these data to maintain programs that address pertinent issues and implement new ones when necessary so that we can make a positive difference for Kentucky's farms, families, and communities.

Agricultural research through Kentucky's land grant programs has been providing new opportunities to farmers and residents for more than 130 years. With external grants and contracts now reaching over $30 million a year, agriculture researchers address problems of agribusiness, consumers, international trade, food processing, nutrition, community development, soil and water resources, and the environment with over 300 externally funded projects. The research continuum reaches from basic to applied science, with new fundamental knowledge as well as applied knowledge that has impacts on the lives of Kentuckians and people across the world.

As a result of interaction with councils and other stakeholders, the 2011 program year emphasis as defined by the number of contacts is as follows:

29%Global Food Security and Hunger
6% Social and Economic Opportunity
25%Life Skill Development
6% Childhood Obesity
12%Leadership and Volunteerism
2% Food Safety
13% Diet, Nutrition and Healthy Lifestyles

1% Sustainable energy
6%Agricultural and Environmental Quality

Joint activities between the University of Kentucky and Kentucky State University remains an expectation of faculty and staff. Faculty and specialist continue to collaborate on many projects, thus allowing the institutions to operate as a single program. Agents and program assistants are both located in county offices, sharing not only office space but also budget, supervision and facility management responsibilities. This strong bond has resulted in shared program efforts, many of which are reported in this document. Efforts include programming and research in such areas as:

Grapes and Wine	Environmental Education for Youth	Youth Entrepreneurship
Goats	eXtension	Small Business Development
Cattle Production	Tobacco Sector Farming Adjustments	Business Retention & Expansion
Pawpaws	U.S. Animal Identification Program	Family Financial Management
Sm. Farm Programs	Organic Ag and Vegetable Programs	E-commerce
Aquaculture	AgrAbility	Health & wellness
Sustainable Ag	Limited Resource Families	Home Horticulture
Youth Dev.	Entrepreneurial Coaching Institute	Childhood Obesity

Kentucky State University and the University of Kentucky share adjunct faculty with at least two positions in entomology, three positions in horticulture, three positions in animal sciences, and two positions in agricultural economics.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	470.0	40.0	75.0	40.0
Actual	644.0	39.0	80.0	60.9

II. Merit Review Process

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

- Internal University Panel
- External University Panel
- External Non-University Panel
- Combined External and Internal University Panel
- Combined External and Internal University External Non-University Panel
- Expert Peer Review
- Other (State Extension Advisory Committee)

2. Brief Explanation

The Kentucky Cooperative Extension has defined merit review as a process used to judge the

degree to which a planned program (1) is relevant to needs expressed by stakeholder groups, (2) draws upon current research and knowledge, (3) is congruent with quality standards and best practice, and (4) is likely to produce anticipated outcomes. Merit review for research is similar in that it uses the criteria of (1) consideration for potential impact, (2) relevance to the needs of stakeholders, and (3) appropriateness within the mission and priorities of the experiment station, USDA, and the land grant mission.

The Plan of Work has been built on program goals that the Cooperative Extension Service identified through Extension advisory committees, developed through logic model program committees and reviewed through program area committees made up of Extension assistant directors, extension agents, department chairs, and specialists. The program area assistant directors selected featured programs based on identified needs in the greatest number of counties, current and planned research and educational resources, and the ability to effectively deal with the issues. Forty-four non-university individuals who comprise the State Extension Council representing both the University of Kentucky and Kentucky State University, all geographic regions of Kentucky as well as agriculture, youth, families, business, industry, and public education served as reviewers of the Plan of Work using the criteria identified above.

The University of Kentucky Agricultural Experiment Station focuses on scientific peer review and merit review on individual research projects. Scientific review is evaluation by other researchers who possess the expertise to conduct the same or similar research. Such review includes technical feasibility, originality and scientific/disciplinary significance of the research. Project proposals go through an initial anonymous peer review. If satisfactory expertise is not available within the department or on campus, external reviews are solicited. After multiple reviews (usually three) a project committee recommends approval, rejection or revision. Only approved projects move forward for review at the college level. The college review committee conducts further scientific peer review by highly qualified individuals as well as a designated statistician and other appropriate faculty. Outside expertise, including researchers around the nation and stakeholder review, are also used.

Kentucky State University requires all project-based proposals to be peer-reviewed based on scientific merit and relevance to state, national and regional USDA priorities and the KSU mission. All Evans -Allen supported proposals are first sent for external peer-review by at least two scientists outside KSU to ensure the relevance and quality of the science. University of Kentucky faculty are often included on the proposal review panels in addition to peer reviews via, regional, national, and professional association colleagues. KSU faculty and staff in CAFSSS will participate in the academic component to support the development of the College. Activities include curriculum development, recruiting, student professional development, materials delivery system, and faculty professional development. Resources will be committed to these activities to enhance the program, including participation in multiple professional societies (membership dues), promote research findings in multi-media (journals, advertisements, etc.) to increase delivery systems to various stakeholders.

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 specifically with non-traditional groups
- Other (Training stakeholders in expectations relative to program needs)

Brief explanation.

The Kentucky Extension Advisory Council System has served as a primary mechanism for gaining input into program direction and development. For programs to meet the needs of the audiences they intend to serve, county level councils are to be diverse enough to represent the various constituencies within the counties including underserved and underrepresented audiences. Their purpose on the council is to express their own needs as well as to gain additional resident perspectives through traditional and non-traditional means in order to provide input into development of local extension programs. These representatives of the various audiences are not only involved in planning but also implementation and evaluation of those programs. In addition to a county extension council, each county also has an agricultural advisory council, homemaker's council, home economics advisory council, and 4-H council. They communicate research and resource needs to the universities. Through an Issues Gathering Process, topics of greatest importance are brought forward through district and state meetings attended by leaders, extension agents, extension program coordinators, and district directors. The issues identified are then presented to state program leaders, extension specialists, and department chairs for response.

Each county also has a district board that manages the fiscal affairs of the Extension office. The board is comprised of citizens in the county that represent the various program areas, plus the county judge executive.

As full partners, the Cooperative Extension Service and Kentucky Agricultural Experiment Station set priorities for research activities with information from the county extension councils, district issues and program committees, and the University of Kentucky Council for Agricultural Research, Extension and Teaching (UK-CARET). UK-CARET functions as an advisory and advocacy group for the College of Agriculture. Members have an opportunity to advise in the development of college priorities and assist in generating public support for those priorities at state and national levels. UK-CARET is representative of the full scope of the land-grant mission:
Extension, research, instruction, and service. Membership is comprised of active and progressive leaders in agricultural and natural resource enterprises. UK-CARET provides a direct link to the national CARET organization. Two members of UK-CARET are designated as national CARET representatives. KSU's CARET representatives work closely with the University and are engaged in advising and representing the interests of its programs. KSU-CARET representatives also participate in national and state policy discussions and assist in the formation of partnerships that will generate programs and resources for KSU's expanded mission with its new college.

In addition, the experiment station meets formally with other entities: quarterly with the Kentucky Tobacco Research Board to set priorities for research by the Kentucky Tobacco Development Center to assist in the transition from the tobacco-based economy; quarterly with the Equine Initiative advisory committee; quarterly with the Livestock Disease Diagnostic Center Advisory committee; bi-annually with the board of the Gluck Equine Research Center to discuss priorities for the equine industry; and regularly with the Tracy Farmer Center for the Environment on conservation-based research. Input is also received through the Community Farm Alliance, the Sierra Club, and other environmental groups through the UK Biotechnology Research and

Education Initiative.

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
- Use Surveys
- Other (Program participants; Project Collaborators)

Brief explanation.

The Kentucky Cooperative Extension program development process is based on a grassroots, six-stage model that begins with the engagement of local advisory councils for agriculture, 4-H, Family and Consumer Sciences and Extension Homemakers. All program committees used a variety of methods for capturing input, including council dialogue and discussion, focus groups, surveys, program evaluations, and working with other local agencies and organizations. Information from program committees are then shared with the total county Extension councils. Membership on these councils includes a broad cross-section of the people in the county representing all demographic and economic segments as well as government, business, education, and community organizations in addition to those identified as under-represented and underserved audiences in extension programs. Through an analysis of data and facilitated dialogue, councils identified program opportunities through which extension and local community organizations could effectively bring about positive change. County extension councils then established program priorities for which county program plans and outcome goals were written. In all, over 1,000 issues were identified by people involved in the process of establishing local program priorities. Most counties utilize a process for examining their council makeup and utilize membership committees and a rotation system to insure new blood and continued broad based support.

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
- Survey of the general public
- Meeting specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public
- Other (Serving on advisory groups/councils for organizations)

Brief explanation.

Even when Extension advisory councils appear to be broadly representative of the local

population, it is possible that established program priorities fail to target important issues. Agents count heavily on their council members to identify program needs but recognize it is a mistake to think that the personal experiences of 15-40 individuals serving on the local Extension council can adequately identify the needs of the total population. Agents are trained to broaden that expression by involving members of the council in conducting a 'situation analysis.'

Councils use three major sources of information useful in conducting a situation analysis. (1) The first is data that have been collected by someone else. This is typically called secondary or existing data.(2)The second is resident perspectives about issues, problems, resources and opportunities.(3)The third information source is current research and knowledge which may have implications for county programming. Extension Councils began the program development process by collecting situational data from these three sources. Council members and Extension staff together or independently pulled this information together. Additional meetings of councils are held to review the data and discuss the implications of the findings. The product of this discussion is a list of program opportunities which may merit Extension's involvement. While existing data and current research and knowledge are as close as a computer and the internet, the council delegates themselves must be diligent in capturing local resident perspectives through one or more of several methods. Agents and local leaders were trained in the following methods:

Community Forums - Community forums are public meetings in which individuals are invited to share and discuss their perspectives on issues facing the community.

Focus Group Interviews - A focus group interview is a structured discussion with a small group of eight to twelve individuals on a clearly defined topic.

Key Informant Interviews - In any community, there is a number of individuals who, because of their unique position within the community, can provide important information about local issues and needs.

Surveys - Surveys are a cost effective way of gathering data from a large number of people. Media Scan - A systematic review of the content of news articles and editorials appearing in local newspapers and on local radio and television stations provides more information about the community

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.

We pride ourselves on being locally driven, grassroots organizations. Information from stakeholders drives research and extension agendas including our pursuit of resources to conduct research and educational programs. In addition, stakeholder input has been utilized across the board for hiring, budget development, resource acquisition, program implementation, and evaluation. Our stakeholders have also served as tremendous advocates in communicating the successes of the organization to campus administrators as well as to outside and nontraditional groups and decision makers.

Brief Explanation of what you learned from your Stakeholders

Some of the issues that were identified and/or were under discussion in FY11 include:

Financial Management- Tough economic times are affecting entire families. Our stakeholders have indicated that this is a top priority across program areas. Families are in need of Extension's expertise in getting by with less. Youth on the other hand, must learn how to manage/budget their finances. This has been identified as a state goal for the Kentucky Extension system.

Environmental Issues- Clientele have reported a need to continue launching educational resources on environmental stewardship related to the home, farm, woodlands, travel, garden, youth and work.

Weight Management - Obesity continues to be a problem in Kentucky and local residents are very concerned. They want Extension to provide web-based resources to promote the expansion of programs related to exercise and health including the updating those resources that already exist.

Operation Military Kids - With two military bases and a host of reservists in Kentucky, these families have become a priority for Kentucky Extension. Stakeholders are wanting more public awareness about issues and challenges affecting military families, particularly those with deployed family members.

Disaster Education Program - Our state has been no stranger to natural disasters, from floods to ice storms to tornados. Extension is looked upon by stakeholders to provide a quick response to help producers plan for agricultural disasters and offer emergency management tips to families.

Professional Development training for agents/volunteers - With the cost of travel sky-rocketing, stakeholders and agents have dialogued about ways to reduce costs. These discussions have resulted in more Distance Learning Technology to enhance communications and educational efforts through network of videoconferencing sites in key Kentucky counties, saving clientele and personnel time and travel expense and expediting issue response time. This also led to the hosting of an Extension Communications Conference which resulted in identifying more ways to host trainings online. As a result, more trainings have been conducted using LYNC and ADOBE Connect.

Camp Improvement Initiative - Kentucky 4H camps received a multi-million dollar appropriation from the state legislature to provide higher quality facilities for Kentucky youth. Stakeholders are have conversations with Extension to determine ways to maximize the use of the facilities.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
9059840	3155707	6497515	3589729

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	9341702	1821953	5170235	2124174
Actual Matching	9059836	819056	25968289	2234321
Actual All Other	0	0	0	0
Total Actual Expended	18401538	2641009	31138524	4358495

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

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Life Skill Development
2	Leadership and Volunteerism
3	Diet, Nutrition and Healthy Lifestyles
4	Social and Economic Opportunity
5	Global Food Security and Hunger
6	Agricultural and Environmental Quality
7	Food Safety
8	Climate Change
9	Sustainable Energy
10	Childhood Obesity

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Life Skill Development

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management	9%	20%	0%	0%
802	Human Development and Family Well-Being	55%	30%	36%	0%
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	0%	0%	36%	0%
805	Community Institutions, Health, and Social Services	0%	0%	28%	0%
806	Youth Development	36%	50%	0%	0%
	Total	100%	100%	100%	0%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	120.0	16.0	0.5	0.0
Actual Paid Professional	135.0	8.4	1.2	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
2335426	352312	142050	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
2264960	231579	521447	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

Through Extension specialists, agents, project coordinators, and program assistants, CES partnered with schools, businesses, and local agencies to present programs designed to build life skill opportunities and improve quality of life in adults and youth. Examples include:

• In-service training for extension agents on planning and retirement •Agents and specialists conducting estate planning and retirement workshops and meetings for adult citizens of Kentucky •Agents providing extension homemaker lessons on wills and retirement •Small Steps to Health and Wealth and GPS Programming have become life skills featured programs •Estate planning and retirement publications will be made available to the public through the web, meetings and activities and county extension offices •Agents and community collaborators training parents, grandparents and community partners in attachment and literacy building, child development, and preventive and non-violent discipline •4-H project groups with six hours or more of teaching time •One-day 4-H project groups •Camp classes •Senior conference track: Child Care- Beyond Babysitting •Middle school career classes - in school and on Web •Alternative school day calendar programs •School-sponsored day care centers for faculty and students •Family Development and Management program for limited resource families, •Entrepreneurship Camp for High School Students

Through research, faculty in the departments of Community and Leadership Development, Family Studies, and Agricultural Economics explore topics such as family firms and policy and the interactions of individuals, families, and communities in the context of the mental and physical health of diverse rural, low-income families.

2. Brief description of the target audience

• Agents, community collaborators, and adults interested in financial management and retirement •Adults with low financial literacy •Parents with children and grandparents •4-H youth from 9 to 19 for project work •4-H youth 11 and up for Babysitting and Beyond Youth entrepreneurs

3. How was eXtension used?

Agents and specialists used materials to enhance their programming efforts. Agents and specialists participated in online training modules and utilized resources that were available.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	665908	213479	1138116	125376

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	2	2	4

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles

Year	Actual
2011	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of individuals demonstrating informed and effective decision making.
2	Number of youth participating in Extension 4-H Youth Development Programs
3	Dependent care providers (adult or child) report changes in knowledge, skills, opinions or aspirations as a result of programs conducted by Extension.
4	Number of youth or adults who demonstrate increased practical living skills.
5	Number of individuals reporting changes in knowledge, skills, opinions or asprirations related to parenting, personal relationships, or career choices.

Outcome #1

1. Outcome Measures

Number of individuals demonstrating informed and effective decision making.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	111131

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Providing youth with leadership and personal development opportunities is of great importance in Kentucky. Creating a culture of citizens giving back to their community through leadership roles serves the multi- purpose process of personal empowerment, community development and ensuring a new generation of involved, volunteering youth. Youth who volunteers are critical to most communities in our society today. However, youth must acquire the skills needed to serve as effective leaders.

What has been done
With the goal of developing Kentucky's youth, the 4-H program has emphasized leadership education through the Step Up to Leadership curriculum. In the past year, 11,106 youth in 76 counties completed at least six-hours of leadership education. Kentucky State University has also taken steps to increase youth participation in 4-H by conducting a three-day youth day camp focusing on photography.

Results
The youth involved in Step Up to Leadership increased their knowledge and skills in communication and public speaking, decision making, group facilitation and teamwork. Of the youth participating in the program, 81% served as members of advisory committees, 75% served as mentors for younger youth, and 64% worked with adults in addressing community issues.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

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 #2

1. Outcome Measures

Number of youth participating in Extension 4-H Youth Development Programs

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	204099

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The 4-H organization is committed to building outstanding leaders with marketable skills that will aid in a young person?s success. Youth who participate in 4-H in every Kentucky county have the opportunity to engage in the fundamental 4-H ideals that include learning by doing. Research has shown that participation in 4-H contributes to higher educational achievement and motivation for future education, increased civic engagement, and lower risk of negative behaviors.

What has been done
Over 204,000 youth from around the state are active 4-H participants. This equates to 25% of all students in grades K-12. Over 100,000 are members through various 4-H clubs, while nearly 86,000 are involved in special interest and short-term programming. The most well-known venues exposing Kentucky youth to 4-H is through camp and school enrichment opportunities.

Results
Over 89,000 youth acquired one or more life skills through 4-H programming. More than 23,000 demonstrated communications skills by presenting speeches and demonstrations.
Kentucky State University has also promoted life skills (workforce prep) for potential 4-Hers through their Summer Transportation Institute (STI) which introduces high school students to career options while applying math and physics principles. The institute received funding from the Federal Highway Administration,

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
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 #3

1. Outcome Measures

Dependent care providers (adult or child) report changes in knowledge, skills, opinions or aspirations as a result of programs conducted by Extension.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	5161

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The 2005 U.S. Census Bureau Survey of Income and Program Participation shows that 89 percent of children under age 5 whose mothers are employed are in some type of regular child care arrangement. About 30 percent are cared for in organized facilities such as day care centers. To ensure that providers in such facilities are knowledgeable about proper child care methods and practices, they are state-mandated to engage in 15 hours of training with a certified provider.

What has been done
The Family and Consumer Sciences agents from various Kentucky counties have become certified providers, partnering with other organizations to offer training to personnel at various child care facilities. Kentucky State University also conducted a 12-week series of parenting classes with the goal of re-unifying parents safely with their children.

Results
On average, 80 percent of the participants across counties reported an increased knowledge on

the topics relating to child care, based on follow-up evaluation data. One county (Larue), established a local Early Child¬hood Council. The council, which focuses on pre-kindergarten children and their caregivers, provides free or low-cost training, expertise and visibility that have greatly enhanced early care in the county. Statewide, over 5,000 dependent care providers reported an increase in their knowledge/skills as a result of programs conducted by Extension. Ninety-three percent of parents participating in the Kentucky State University program reported that they agree or strongly agree that they are better parents since attending the parenting program. KSU's SKY Families program is a potential savings of $900,000 annually to taxpayers of the Commonwealth of Kentucky.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
806	Youth Development

Outcome #4

1. Outcome Measures

Number of youth or adults who demonstrate increased practical living skills.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	146130

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Kentucky Extension is committed to improving the quality of life for individuals and families. In additional to serving traditional audiences, efforts are being put forth to reach out to those non-traditional audiences that are in need of what Extension has to offer. Kentucky continues to experience a significant growth in the Hispanic population. According to the Kentucky State Data Center and the 2010 US Census Data, the Hispanic population in Fayette County doubled in the last decade. Such a demographic change increases the need to train Extension agents to

respond in a culturally competent manner.

What has been done

KSU's Hispanic Initiative provides ongoing technical advice, consultation, and training to enhance understanding of the Hispanic culture and working with LEP clients. As a result, agents have access to expertise that teaches how to integrate the information gained into culturally appropriate intervention plans to address the needs of Hispanic LEP families.

Results

This effort allowed agents to gain the skills and knowledge to provide services to Latino families. In regards to additional programs, KSU taught a basic life skills lesson developed for low to moderate income consumers in 19 counties reaching a total of 2,080 Homemakers. An evaluation indicated that 100% gained knowledge about reducing expenses and spending, and how to stretch their money, and 97% indicated that they will use the material they learned. Overall, more than 140,000 citizens have demonstrated an increased practical living skills as a result of Extension programming.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
806	Youth Development

Outcome #5

1. Outcome Measures

Number of individuals reporting changes in knowledge, skills, opinions or asprirations related to parenting, personal relationships, or career choices.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	19853

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Since the development of the 4-H Science, Engineering and Technology program, increasing youth and adult interest in Science, Technology, Engineering and Applied Mathematics (STEM) education has been the primary goal of the program. With many groups and organization focusing on STEM programs, 4-H is unique in its approach of incorporating Youth Development using STEM as a tool. This has helped the Kentucky 4-H Program start to reach audiences never reached before.

What has been done

The number of youth gaining exposure to Science, Engineering and Technology careers is steadily increasing in Kentucky. For instance, twenty-four counties participated in the H2O program statewide. Kentucky SET/STEM took the approach of counties training counties, rather than top down programming. Counties receiving mini-grants not only to host H2O programs, but also to mentor additional counties in starting their own H2O programs. Another venue has been the KSU P.A.C.T (Pathways and Access to Careers in Technology) Program which aims to increase students' knowledge of scientific applications and understanding of human health and nutrition

Results

The 4-H program is uniquely positioned to emphasize science, engineering and technology through its non-formal, hands-on programs and activities. In the past year, 24,141 4-H youth participated in programs in robotics, biotechnology, geospatial relations, electronics and multi-media. These learning experiences in the sciences are a first step in attracting youth to explore the sciences as a future career option. In one county evaluations showed that 96% of the students learned to program a two motor robot and change the robots speed, while 91% were able to recognize the common electrical symbols for a battery, a meter, a switch, a ground and a resistance. Exposing the students to technology has encouraged and motivated students to pursue educational opportunities in areas of science, engineering and technology with the goal of obtaining a career related to these areas. Kentucky Extension is alwo putting forth efforts to aid adults in the use of technology. Kentucky State University organized a 3-week series workshops to help older clientele keep up with new technology.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Methods used: Retrospective(post pre), Formative (during programs)

See Outcomes 1-5 for results of evaluations.

Key Items of Evaluation

Pre and post surveys, observation, secondary data analysis

See Outcomes 1-5 for results of evaluations.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Leadership and Volunteerism

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	100%	85%	0%	0%
903	Communication, Education, and Information Delivery	0%	15%	0%	0%
	Total	100%	100%	0%	0%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	77.0	1.5	0.0	0.0
Actual Paid Professional	81.0	4.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
1121004	144699	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
1087180	135697	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

•Community leadership development programs will be conducted for the general public as well as

training for those serving in leadership roles in Extension councils and district boards, extension homemaker organizations and 4-H programs. •Extension will continue to utilize SEAL (Strengthening Extension Advisory Leadership) materials with extension leaders and in training facilitators to conduct local community programs. •Counties will identify volunteers and send them to certification workshops, thereby reaching more 4-H members across Kentucky. •Kentucky 4-H members will receive consistent, uniform education through school enrichment programs, after-school programs, day and /or summer camps and through communications events in the 4-H "Step Up to Leadership" and 4-H Communications - Speeches and Demonstrations projects and programs

KSU's REAP Program (Research & Extension Apprenticeship Program) for high school students

Ag Leadership Program

Kentucky Entrepreneurial Coaches Institute-training for individuals who will mentor future business owners

Engaging Youth Serving Communities Initiative - promoting youth leadership/civic engagement

2. Brief description of the target audience

• General public as well as those serving in leadership roles in extension councils and district boards, extension homemaker organizations and 4-H programs •Volunteers from Kentucky counties with appropriate background and experience in subject matter that we can build on for 4-H subject matter and leadership training •"Step up to Leadership" curriculum and activities are designed for youth in grades K-12 Community-based non-profit organizations

Kentucky teens with an interest in higher levels of civic engagement

Local businesses, entrepreneurs and those receptive to developing savvy business acumen

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	565220	713438	283437	351394

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles

Year	Actual
2011	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of citizens indicating increased leadership knowledge, skills, or confidence through participation in leadership programs.
2	Number of adults and youth utilizing improved skills in communication, problem solving, or group process in addressing community issues and needs.
3	Number of people who are involved in addressing significant community issues.

Outcome #1

1. Outcome Measures

Number of citizens indicating increased leadership knowledge, skills, or confidence through participation in leadership programs.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	48350

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Building the capacity of volunteer leaders within counties is critical for community sustainability and viability. Developing leadership is a primary way to build capacity, while also having a positive effect on community infrastructure, groups and families. Building civic capacity and personal leadership awareness are also imperative ways to develop a viable, action-based community. Challenges abound for today's communities, not the least of which include social, economic, and environmental concerns. It has been determined by many local leaders that if economic and community development is to occur, then they must obtain the skills to make a difference.

What has been done
The Community and Economic Development Initiative of Kentucky (CEDIK) works closely with all Extension program areas to fully integrate community and economic development into the roles of Extension agents. Several trainings, curricula and webinars were conducted for Extension and non-Extension audiences.

Results
Statewide, a total of 48,350 citizens indicated having an increase in knowledge, skills or confidence toward leadership. In one county, a leadership program continues to make an impact in the lives of those graduating and on the community in which they serve. Annually, an evaluation is conducted to measure the impact of the program on the lives of graduates and the community. Positive results continue to accumulate. Examples are: eighteen classes have been conducted with 247 community leaders having graduated. Graduates are in active leadership roles on state boards, local boards, elected offices, civic organizations, churches, etc. Graduates are sought after by city and county officials to fill roles on boards and committees. In evaluations, participants continue to state an increase in knowledge, plans to become more involved in

leadership roles, plans to make positive changes in their lives, and an increase in networking with other leaders.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
903	Communication, Education, and Information Delivery

Outcome #2

1. Outcome Measures

Number of adults and youth utilizing improved skills in communication, problem solving, or group process in addressing community issues and needs.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	60664

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Effective leadership development is crucial for the success of any organization, and yet many organizations don't take the necessary time and resources to provide formal learning to reinforce the skills that produce effective leaders. In Cooperative Extension, volunteer leaders are often asked to share with community leaders and government officials the value of Extension programs. It is important that they have the tools they need to communicate effectively.

What has been done
Community and Economic Development specialists created multiple trainings designed to refine participants' understanding of the principles and strategies of problem solving, negotiated agreements and conflict resolutions. Every lesson includes case studies, role plays or practice activities to enable participants to develop their skills in facilitating community discussions and negotiated agreements.

Results
Specialists engaged over 600 citizens through surveys and focus group discussions to address issues around disaster recovery. One community, Wilmore, formed a planning group that worked

with Extension specialists to develop a strategic plan that would help redevelop the community after being devastated by storms. The City council accepted the proposal and appointed a committee to begin implementation.

Also, Kentucky State University's REAP Program (Research & Extension Apprenticeship Program) for high school students conducted an outreach project to assist in the cleanup of historically black Green Hill Cemetery in Frankfort using GPS (geo-positioning system) technology to capture the locations of headstones and connect those with information about the deceased. Students extended their learning beyond the technology and delved into the cultural and historical aspects of the cemetery.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
903	Communication, Education, and Information Delivery

Outcome #3

1. Outcome Measures

Number of people who are involved in addressing significant community issues.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	36515

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The aging leadership base in Extension and other community programs creates a need for younger adults and teens to become more involved in Extension and other community programs. Educating and involving adults and teens as volunteers from various age ranges can provide support for a variety of Extension and community programs, with those in the 65+ range providing a base whose knowledge and experience can be utilized in training, mentoring and advising new volunteers. Providing leadership and personal development opportunities can play a key role in breaking negative generational patterns and prepare younger citizens in assuming leadership roles both now and in the future, in the workforce as well as in the community.

What has been done
Kentucky has been involved in a federally funded initiative (Engaging Youth, Serving Communities) for several years. The purpose is to help youth develop the skills needed to serve as community leaders.

Results
Over 75 Todd County youth and adults engaged in community meetings, brainstorming activities, and council presentations to focus on bringing about positive change in the rural communities of Elkton, Guthrie, Trenton and Sharon Grove, Kentucky. The project poured more than $20,000 into Todd County through 4-H programming. An evaluation of the 4-H projects funded through the National RYD (Rural Youth Development) Grant program involving 12 land grant university projects showed that between 80 and 95% of the youth and adults either agreed or strongly agreed with these statements: I taught others, I acted as a mentor to others, I planned learning activities, I am more confident in helping others and I am more confident in myself overall. Monroe county also participated in the project. The youth led a backpack program, which became so successful in the county that it will now be a sustained project (adopted by a church that will continue to work collaboratively with 4-H youth).

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
903	Communication, Education, and Information Delivery

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Public Policy changes
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Methods used: Post-only; retrospective assessments (post, then pre); case study; comparison between participants

See Outcomes 1 and 3 for evaluation results.

Key Items of Evaluation

Individual surveys; follow-up interviews (phone, face to face)

See Outcomes 1 and 3 for evaluation results.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Diet, Nutrition and Healthy Lifestyles

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
502	New and Improved Food Products	0%	0%	20%	0%
503	Quality Maintenance in Storing and Marketing Food Products	0%	0%	7%	0%
702	Requirements and Function of Nutrients and Other Food Components	0%	0%	21%	50%
703	Nutrition Education and Behavior	96%	6%	0%	30%
721	Insects and Other Pests Affecting Humans	0%	0%	28%	0%
722	Zoonotic Diseases and Parasites Affecting Humans	0%	0%	5%	0%
723	Hazards to Human Health and Safety	0%	4%	16%	20%
724	Healthy Lifestyle	4%	90%	3%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	95.0	2.0	3.0	11.0
Actual Paid Professional	99.0	1.8	3.7	9.5
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
1214421	84932	183297	311739
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
1177779	34127	931585	396454
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

• Contacts with clientele related to diet and health will include volunteer training, health fairs, Extension Homemaker leader lessons, safe night programs, healthy homes programs, and more.
• Multidisciplinary programs aimed at strengthening local food systems. Examples of programs to be offered will include: 4-H school enrichment, after-school programs and day and/or summer camp programs on 4-H Jump into Foods and Fitness. Health Rocks! * Weight--the Reality Series - Body Image and Get Moving Kentucky physical activity and weight management programs, LEAP-Literacy, Eating and Activity for Preschool Program and Exploring MyPyramid with Professor Popcorn for elementary school age children. •EFNEP - Expanded Food and Nutrition Educational Program for low income families with children. •Multi-agency activities related to diet and health. •Continued research in the areas of nutrient effects on high-fat diets, antioxidant effects on cancer prevention, environmental effects on nutrient requirements and more. KSU conducted a farm safety day for 150 fifth graders

Major research efforts in this program area include: • Food consumption and physical activity are being examined as indicators of risk for obesity in preschool children. •The combined effects of selected vegetables on bone metabolism are under study as it pertains to osteoporosis. • The health and safety of agricultural workers. • Bioprotective effects of phytochemicals to mediate immunity and antigenotoxic potential * Biology and behavior of bed bugs and the tiger mosquito to help improve control *the potential for nutrition to modulate health risks from exposure to toxic chemicals

2. Brief description of the target audience

• Extension agents •Community agencies •Volunteer leaders •Parents •Grandparents •General public •Public housing residents •Scientific community •Jump into Food and Fitness participants: curriculum designed for youth ages 8-11

3. How was eXtension used?

Agents and specialists utilize eXtension resources to enhance programming.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	613591	182764	339487	102805

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

Patent Applications Submitted

Year: 2011

Actual: 1

Patents listed

"Transfected mosquito vectors" #7,868,222.

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	14	14

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles

Year	Actual
2011	14

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of individuals who experience a change in knowledge, opinion, skills, or aspirations regarding lifestyle changes (diet, exercise, etc.) that improve personal health.
2	Number of citizens reporting making lifestyle changes for the purpose of improving their health.
3	Number of individuals implementing personal health protection practices appropriate for their life stage (preventive health practices, participation in screening and detection opportunities, immunizations, etc.).
4	Number of individuals adopting at least one new safety practice (bicycle helmet, smoke detector, radon detector, fire extinguisher, farm safety devices, ATV safety, etc.).

Outcome #1

1. Outcome Measures

Number of individuals who experience a change in knowledge, opinion, skills, or aspirations regarding lifestyle changes (diet, exercise, etc.) that improve personal health.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	138966

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The drug epidemic in Kentucky has increased across the state tremendously. A number of youth are exposed to drugs (prescription and illegal drugs). Extension has worked toward educating adults of the perils around Kentucky youth. Efforts are also directed toward educating youth on the dangers of utilizing drugs and suggesting ways to reduce the peer pressure associated with substance abuse.

What has been done
Kentucky State University (KSU) Land Grant Program led Health Rocks! (HR!), a state-wide initiative sponsored by the National 4-H Council, and solicited the support of KSU, Extension, school districts, afterschool programs, and community and faith-based organizations to help with engaging 10-15 year olds in this healthy lifestyle curriculum to address the disparate numbers of youth in the state who use alcohol, drugs and tobacco. Community partners were invited to join this effort by taking the first step to become trained by committing to an online training and delivering a minimum of (10) contact hours to youth receiving the curriculum. KSU demonstrated their commitment by providing the free training, curriculums, implementation kits, and youth and monetary incentives for those who were able to reach a set number of youth by the deadline.

Results
The Team intensified their efforts by recruiting and engaging multiple partners to become a part of the initiative. It also provided an avenue to spark innovative ideas for reaching our targeted audience and build momentum in the community for Health Rocks! School districts, afterschool programs, churches, community organizations, and KSU campus organizations were also invited to join this effort. In spite of the enthusiasm of each organization, one school went the extra mile and made Health Rocks! an intricate part of their daily routine for two weeks. One site choose to implement the program to the entire school of approximately 700 students. The teachers pre-

recorded each session, staged each step as if the students were present and included down time for them to get their materials in order, thus allowing a large number of youth to be reached in a short time. Overall, approximately 1200 youth completed the Health Rocks! curriculum in KY and additional sites have committed to partnering with KSU in 2011 for implementation. Follow-ups will be conducted to determine the practice changes among youth.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
723	Hazards to Human Health and Safety
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

Number of citizens reporting making lifestyle changes for the purpose of improving their health.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	57262

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The lack of physical activity, overweight and obesity contribute to several chronic diseases including cancer, diabetes and cardiovascular disease. Several Kentucky counties rank high in cardiovascular disease, diabetes and lack of physical activity. The state of Kentucky has the 5th highest level of adult obesity in America. Opportunities to interact with others when eating, learning about new foods and meal and food preparation ideas can stimulate people to eat healthier foods.

What has been done
In Kentucky, Extension has offered several programs to promote healthy eating habits. Two University of Kentucky programs include "Small Steps to Health and Wealth" and "Weight: The Reality Series". Both aim to help Kentuckians achieve a healthier weight. Through Kentucky State University, monthly newsletters and prepared and distributed; these contain information on

various topics such as nutrition, food safety, basics cooking information, and other subjects.

Results

The Small Steps to Health and Wealth program was conducted across the state with 1276 residents participating. Seventy-eight percent set at least one specific health-related goal for themselves because of the program. Over half (686) achieved or partially achieved at least one specific health-related goal. KSU's program participants have indicated that they have tried a new food or recipe because of the program and families have reported making small changes and introducing better food selections to their families.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
723	Hazards to Human Health and Safety
724	Healthy Lifestyle

Outcome #3

1. Outcome Measures

Number of individuals implementing personal health protection practices appropriate for their life stage (preventive health practices, participation in screening and detection opportunities, immunizations, etc.).

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	30291

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Obesity can lead to hypertension, diabetes and other health related problems. Kentucky ranks 3rd highest in the US for physical inactivity. Lifestyles & behavioral risk factors contribute greatly to the onset of chronic diseases which are the leading causes of death of Kentuckians. Kentucky youth are also at risk for developing chronic diseases due to unhealthy lifestyles.

What has been done
Family and Consumer Sciences specialists and agents have encourages families to make proactive choices to improve individual health and well-being through various programs. Whether choosing a low fat, nutritious diet, increasing health literacy for chronic disease prevention or participating in regular physical activity all have been used to promote the use of proactive protection practices. Extension has also helped individuals, families and communities manage challenges and discover the positive aspects of life's transitions and growing older. KSU worked with housing and community residents, teaching the importance of eating fresh vegetables, exercising, and minimizing overuse of salt and sugar.

Results
A total of 139,121 people increased knowledge of lifestyle changes to improve personal health. All also planned on improving at least one behavior related to the subjects taught.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
721	Insects and Other Pests Affecting Humans
722	Zoonotic Diseases and Parasites Affecting Humans
723	Hazards to Human Health and Safety
724	Healthy Lifestyle

Outcome #4

1. Outcome Measures

Number of individuals adopting at least one new safety practice (bicycle helmet, smoke detector, radon detector, fire extinguisher, farm safety devices, ATV safety, etc.).

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	29701

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Kentucky has its share of those whose lives have been affected by a farm-related injury or accidental deaths. The state also leads the nation in ATV related deaths. During issues identification meetings community residents identified the need for in-depth ATV safety and household safety precautions education programs for youth and families.

What has been done

Kentucky AgrAbility has served disabled citizens for eighteen years. The University of Kentucky Cooperative Extension Service has received funding from the US Department of Agriculture to provide education and technical assistance to agriculture operators and farm families who face the challenges of a disability. Kentucky AgrAbility assists rural and farm families in overcoming limitations. Kentucky AgrAbility is part of the National AgrAbility Project and exists as a partnership between the University of Kentucky Cooperative Extension Service, Cardinal Hill Rehabilitation Hospital, Kentucky State University and the Kentucky Office of Vocational Rehabilitation. Kentucky State university also conducted a farm safety day for 150 fifth graders to make them aware of what can happen when they take drugs and cleaning products out of their original container. Children said they will now stop and make sure they see the container before eating or drinking anything and work with parent to encourage them to make sure thing are identified.

Results

A new grant for the AgrAbility Project was implemented and will continue for four years. The grant will be used to assess and assist the population of Kentucky that is receiving the majority of their income through agriculture and have a disability that prohibits them from being productive. Also new to the Kentucky AgrAbility program is the pressure mapping system. Designed to show where on the body the
pressure is a problem when operating the equipment it then allows
technicians to recommend ways to alleviate the problem. The ten thousand dollar acquisition will allow farm workers to continue riding the equipment for extended periods of time without developing the
types of sores that can lead to life threatening infections.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Post-tests; Pre & Post tests; Formative evaluation; comparison between program participants

See Outcomes 2 and 3 for results of program evaluations.

Key Items of Evaluation

Surveys; observation protocols; focus groups

See Outcomes 2 and 3 for results of program evaluations.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Social and Economic Opportunity

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	0%	25%	6%	0%
601	Economics of Agricultural Production and Farm Management	0%	60%	11%	50%
602	Business Management, Finance, and Taxation	8%	0%	10%	0%
603	Market Economics	1%	0%	12%	0%
604	Marketing and Distribution Practices	20%	0%	11%	50%
605	Natural Resource and Environmental Economics	0%	0%	12%	0%
606	International Trade and Development	0%	0%	8%	0%
607	Consumer Economics	0%	0%	6%	0%
608	Community Resource Planning and Development	69%	15%	19%	0%
610	Domestic Policy Analysis	2%	0%	5%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	25.0	2.5	3.5	4.8
Actual Paid Professional	33.0	5.4	6.1	2.7
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
560502	226486	448707	94247
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
543590	143823	1898879	101083
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

• Delivery of educational programming and workshops on topics such as understanding community dynamics, asset analysis, business planning, marketing and hospitality management •Efforts to educate producers about marketing and adding value to Kentucky Agricultural products including MarketMaker, Agritourism, Farmers Markets, Kentucky Proud Campaign, specialty livestock markets and marketing programs, Kentucky Entrepreneurial Institute, etc. •Formation of nontraditional advisory councils in the areas of community and economic development, tourism, agritourism, and arts where appropriate need and resources are identified •Research projects including estimating how changing agricultural trade policies and macroeconomic conditions influence U.S. agricultural exports, and urban vs. rural food access and cost, understanding the role of amenities in rural development and the impact of social changes on rural quality of life, and examinations of factors impacting local and regional produce markets •The Family Economics and Management Program will focus on Earned Income Credit and Tax Credit opportunities for Kentucky Families. Youth entrepreneurship education Entrepreneurial development and outreach to educate local officials and leaders on the importance of planning for economic development KSU promotes the Earned Income Tax Credit (EITC) to low-income consumers through county extension offices, home and group meetings, food stamp offices, Community Action agencies, newspaper articles, radio, grocery stores, local housing authorities, and other organizations.

2. Brief description of the target audience

• county extension agents •Kentucky crop, livestock, produce producers •entrepreneurs •agritourism providers •active and potential community leaders •4-H members • scientific community High school students, teachers, and counselors

Locally elected and appointed officials
Limited resources farmers

3. How was eXtension used?

Agents and specialists are using resources found on eXtension; clientele are encouraged to utilize eXtension as a resource

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	322372	274788	98269	82079

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	12	12

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles

Year	Actual
2011	11

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of people involved in addressing significant community issues.
2	Number of ongoing coalitions with which extension is actively involved.
3	Number of people who are ready to enter the workforce.
4	Number of individuals reporting changes in knowledge, opinions, skills or aspirations related to economic or enterprise development.

Outcome #1

1. Outcome Measures

Number of people involved in addressing significant community issues.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	37945

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Research indicates that citizens who begin volunteering at a young age are much more likely to continue volunteering as adults. However, many of today's youth lack the opportunities to become civically engaged in their communities. Moreover, most are not afforded the chance to serve in leadership roles when it comes to addressing significant community issues.

What has been done
Kentucky 4-H has worked diligently to develop the leadership skills of youth as well as those adult volunteers that work with them. Over 100,000 Kentucky youth have participated in citizenship programs and another 11,281 have been exposed to civic engagement.

Results
During a flood disaster, many homes in Lyon County were either flooded, in danger of flooding, or cut-off by flood waters. Members of the Lyon County 4-H Teen Leadership Council gathered to fill sandbags after a message was sent to them. One member of the group arrived with her entire family to work. As the severity of the need increased, many 4-H youth became involved. After exhibiting strong leadership skills, one female teen was asked by the county judge executive to be in charge of a sandbagging location. An informal poll of 150 fourth and fifth grade 4-H members showed that over one-third volunteered during the disaster. Ninety percent of 40 teen members polled indicated they assisted in the community during the disaster; some reported volunteering every day for over two weeks. If each of the younger volunteers gave only one hour, the value of their work donation to the community would be $1,068 (based on figures provided by the Independent Sector). Kentucky State University also conducted a service project. KSU, in conjunction with Shoeman Water Projects in Missouri and Edge Outreach in Louisville, began a shoe drive to help place water purification systems in developing countries. KSU collected

enough shoes to purchase and install three water purification systems that will save thousands of lives from water-related illnesses and death.

4. Associated Knowledge Areas

KA Code	Knowledge Area
131	Alternative Uses of Land
604	Marketing and Distribution Practices
608	Community Resource Planning and Development

Outcome #2

1. Outcome Measures

Number of ongoing coalitions with which extension is actively involved.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	2565

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Viable coalitions are critical to Kentucky counties and Kentucky Extension in general. In most cases, these form relationships that provide Extension with stronger ties to successful programs, while also providing access to additional resources.

What has been done
Specialists in the area of Community and Economic Development worked with the Kentucky Agricultural Development Board, an entity developed by the 2000 General Assembly to distribute 50% of the state monies received from the Master (Tobacco) Settlement for the general purpose of agricultural development in the Commonwealth. The Board will invest these funds in innovative proposals that increase net farm income and effect tobacco farmers, tobacco-impacted communities and agriculture across the state by stimulating markets for Kentucky agricultural products, finding new ways to add value to Kentucky agricultural products, and exploring new opportunities for Kentucky farms.

Results
A successful coalition continues to exist between the Kentucky Ag Development Board and Extension. Strategic planning with the Board and staff of the Governor's Office of Agricultural Policy resulted in identifying key areas for future investment of tobacco settlement funds to stimulate both agricultural development and rural economic development

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
604	Marketing and Distribution Practices
605	Natural Resource and Environmental Economics
606	International Trade and Development
607	Consumer Economics
608	Community Resource Planning and Development

Outcome #3

1. Outcome Measures

Number of people who are ready to enter the workforce.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	9283

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
With the unemployment rate in some Kentucky counties at an all-time high, family economic security is threatened by the loss of income from the business sector, decreasing farm income, rising cost of gasoline and general cost of living. However, teaching our population to take a pro-active stance in economic development is a challenge.

What has been done

The Extension Service can help meet this need by offering educational programs on community development, community collaborations, small business development, entrepreneurship, and continuing to aid in developing our leadership base. Kentucky State University partnered with Minority Economic Development Initiative of Western Kentucky (MEDI) with a grant from USDA Rural Development in support of small limited-resource businesses, minority and women-owned businesses and emerging entrepreneurs to revitalize the local economy, in a community that has over 34% of its population being ethnic minorities.

Results
Over 100 people will learn about MEDI and its partners; the KSU and UK extension services, the USDA rural development and other resources they can access to support small limited resource businesses and entrepreneurs seeking assistance, technical assistance, and other services needed to revitalize their economy. The anticipated impact is at least 2 new business start-ups, 2 saved businesses, at least five jobs generated as a result and increased access to USDA rural development services.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #4

1. Outcome Measures

Number of individuals reporting changes in knowledge, opinions, skills or aspirations related to economic or enterprise development.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	20051

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The economic downturn has caused county leadership to identify business skills and entrepreneurship as important areas for cooperative extension service programming. Extension is now being seen as a source to help residents develop skills needed to start their own businesses.

With so few job opportunities, many are seeing entrepreneurship as their only alternative.

What has been done

Extension currently offer several county based programs that focus on entrepreneurship. The Kentucky Entrepreneurial Coaches Institute (KECI) is one resource at the state level to help Extension staff and non-Extension employees enhance business skills. Another statewide program has been the E-discovery challenge, a UK Extension initiative funded by the Appalachian Regional Commission to help encourage entrepreneurship in 32 economically distressed Kentucky communities. The focus was to train middle school teachers to integrate entrepreneurship into their classroom and to help students launch new businesses. Kentucky State University also offered a class, Starting Your Online Business, in conjunction with the Small Business Center at Northern KY University.

Results

About 100 teachers took part in this program. In turn, they worked with 2,074 students to launch 507 student-led businesses that sold products and services. Seed money was furnished to students and over 95% was returned to the schools to help students launch more businesses within the next school year. This is a sign that the program is sustainable and will continue after the grant expires.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
603	Market Economics
604	Marketing and Distribution Practices
605	Natural Resource and Environmental Economics
608	Community Resource Planning and Development
610	Domestic Policy Analysis

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
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Pre post surveys have revealed positive outcomes; process evaluation

Key Items of Evaluation

Surveys, follow-up assessments

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Global Food Security and Hunger

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	0%	5%	0%	30%
201	Plant Genome, Genetics, and Genetic Mechanisms	0%	0%	9%	0%
205	Plant Management Systems	53%	10%	15%	0%
211	Insects, Mites, and Other Arthropods Affecting Plants	0%	10%	13%	15%
212	Pathogens and Nematodes Affecting Plants	0%	0%	11%	0%
215	Biological Control of Pests Affecting Plants	0%	10%	9%	10%
216	Integrated Pest Management Systems	0%	5%	2%	10%
301	Reproductive Performance of Animals	0%	10%	7%	0%
302	Nutrient Utilization in Animals	0%	10%	12%	15%
303	Genetic Improvement of Animals	0%	10%	5%	0%
304	Animal Genome	0%	0%	3%	0%
307	Animal Management Systems	39%	0%	2%	0%
308	Improved Animal Products (Before Harvest)	0%	5%	0%	0%
311	Animal Diseases	0%	5%	11%	20%
401	Structures, Facilities, and General Purpose Farm Supplies	0%	10%	0%	0%
402	Engineering Systems and Equipment	3%	0%	1%	0%
601	Economics of Agricultural Production and Farm Management	0%	10%	0%	0%
604	Marketing and Distribution Practices	5%	0%	0%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890

Plan	180.0	16.0	55.0	13.5
Actual Paid Professional	209.0	7.1	44.6	29.6
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
2709094	336583	3184753	937633
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
2627353	143823	15170905	1340330
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

The development and transfer of technical resources is a critical dimension of a strategy to advance agriculture and the competitiveness of the state's agricultural economy.

•Field days, demonstration programs, plot work and hands-on training by agents and specialists will continue to be important mechanisms for disseminating technical information on production agriculture and horticulture •Printed material, mass media, Web sites, audio, and electronic communications will be employed to disseminate the latest research findings on decision-making •Featured programs for this plan of work cycle will include: Grain Crops Academy, Master Grazer Program, Horse College and the Innovative Tobacco Producer Program •Goat Production and Management Programs •Small Farm Program at KSU will focus on needs of small and limited resource farmers, •The Kentucky Fruit and Vegetable Conference plays a major role in commercial horticultural producer education •Third Thursday programs will be conducted at KSU and their research and demonstration farms will attract small and limited resource farmers and will also serve as training for County Extension Agents •Aquaculture and Fish Disease/Management Programs •Master Cattlemen and advanced Master Cattlemen programs will be conducted •Educational programs qualifying producers to receive Tobacco Settlement funds in the areas of goats, forages, bull selection and hay storage will improve producer skills in these areas •New Research findings from KSU's Aquaculture Research center, pawpaw, goats, and honeybees will be the subject of field days and meetings to bolster the expanding alternative in Kentucky and the Southern Region Demonstration and training for appropriate production and processing of pastured poultry and honey. •Home-based processing training •On-site food demonstrations

Ongoing research at UK supporting food production and security includes: •biological improvement of agronomic and horticultural crops • optimized forage genetics and management strategies •sustainable weed and pest management of agronomic crops •improving nutrition of poultry, swine, horses and cattle • enhancing reproductive efficiencies of cattle and horses •improved grain storage and handling technologies •basic exploration of mechanisms controlling growth and pest and disease resistance in agriculturally important plants and animals

The KSU Third Thursday workshop series continues its success each month and, also, coordinated

its Sustainable Farms, Families, and Farm Energy Field Day with more than 600 in attendance.

2. Brief description of the target audience

• Kentucky farmer operations with agents recruiting and selecting producers for participation in Grain Academy, Master Cattlemen, Innovative Tobacco Grower Program, Horse College, and Master Grazer Programs •Farm owners, operators, absentee land owners with a variety of backgrounds and experiences •Farmers' market members and potential members •Community and farm leaders •Consumers •Extension agents

3. How was eXtension used?

Online resources were accessed by agents, specialists and clientele

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	2003251	89169	138911	5692

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

Patent Applications Submitted

Year: 2011

Actual: 5

Patents listed

"Cell lines having enhanced cell longevity and protein expression." # 7,842,493
"Botryoccocus braunii triterpene synthase proteins and nucleic acid molecules, and methods for their use" #7,985,568
"Transformed plants accumulating terpenes." # 8,017,835
"Infectious cDNA clone of the modified live virus vaccine strain of Equine arteritis virus." # 8,012,735
"Nucleotide and Amino Acid Sequences for Calmodulin Protein Methyltransferase" Application # 20110166208

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	26	179	205

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Graduate research assistants engaged in research
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Published research journal articles

Year	Actual
2011	177

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of producers adopting one or more practices resulting in increased profits.
2	Economic impact of the adoption of farming practices resulting in increased profits.
3	Number of producers adopting resource management technologies (IRM, IPM, soil testing, soil fertility management, etc.).
4	Number of producers completing Grain Academy and Master Grazer Programs receiving their certification.
5	Number of individuals reporting changes in knowledge, opinions, skills and aspirations related to impact of public policies on agriculture and the environment.
6	Economic impact of compost bedded pack barns for dairy production
7	New tools available for improved management of agronomic crops.

Outcome #1

1. Outcome Measures

Number of producers adopting one or more practices resulting in increased profits.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	18921

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Producers are desirous of ways to make their farming operations more profitable. With the economic downturn, families are looking for ways to sustain their well-being.

What has been done
Research at both Kentucky State and the University of Kentucky has been conducted to investigate best practices that can increase profits. Kentucky State is also investigating direct, restaurant, and retail marketing of aquaculture products that small-scale farms can produce. The potential impact of this project will increase marketing and direct sales, and indicate the types of products in high demand, the willingness-to-pay for these products, and the potential of targeting underserved ethnic consumer groups.

Results
Kentucky State University research estimates that use of soybean meal and distiller's dried grains (DDGS) with has reduced feed costs for producers between $50-350/ton of feed. This result helps create new markets for Kentucky-produced ingredients, such as DDGS and soybean meal.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants

215	Biological Control of Pests Affecting Plants
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
311	Animal Diseases
401	Structures, Facilities, and General Purpose Farm Supplies
402	Engineering Systems and Equipment
604	Marketing and Distribution Practices

Outcome #2

1. Outcome Measures

Economic impact of the adoption of farming practices resulting in increased profits.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	25305848

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Limited resource and minority farmers face unique challenges that can hinder the functionality of their operation. Although they may not have the economic impact of a larger farm, these family-owned businesses provide job opportunities in rural Kentucky and value-added products for consumers.

What has been done
The Kentucky State University Small Farm Program is an extension program designed to help farm families with decision-making skills to solve farm and home problems. One-on-One technical assistance is provided. It includes educational programs that emphasize the use and understanding of USDA agencies and their programs, while providing technical assistance in completing applications and helping farmers through the entire application process.

Results
The average KSU Small Farm Program co-operator had an estimated $4,500 increase in farm income, even with a declining economy. The average African American co-operator had an estimated $5,000 increase in income.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
216	Integrated Pest Management Systems
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
401	Structures, Facilities, and General Purpose Farm Supplies
604	Marketing and Distribution Practices

Outcome #3

1. Outcome Measures

Number of producers adopting resource management technologies (IRM, IPM, soil testing, soil fertility management, etc.).

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	28202

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Producers are in need of ways to gain access to educational programming. Many are located a great distance from the land grant schools and therefore are often unable to attend meetings and seminars across the state.

What has been done
In order to reach goat producers in significant numbers, more web-based educational meetings are being held.

Results
The trainings for these events (4 counties) were rated as good to very good. A total of 6 hours of high quality goat production information was provided. Multi-state efforts were utilized to promote goat production and sheep and to market educational programs. There were 12 Kentucky Counties, 25 Indiana Counties including outlying states such as Michigan, Pennsylvania, North Carolina, Virginia and West Virginia.

4. Associated Knowledge Areas

KA Code	Knowledge Area
201	Plant Genome, Genetics, and Genetic Mechanisms
205	Plant Management Systems
304	Animal Genome
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
311	Animal Diseases

Outcome #4

1. Outcome Measures

Number of producers completing Grain Academy and Master Grazer Programs receiving their certification.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	252

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
With the increase in the emphasis of farm income on Kentucky cattle, there is a need for producers to implement practices that will improve their operations.

What has been done
The Master Grazer Educational program components were conducted in 13 locations across the state of Kentucky. Educational programs included Kentucky Grazing Schools, the Applied Master

Grazer program, and regional grazing networks. Approximately 288 producers from 68 Kentucky counties participated in the program between July 2010 and June 2011. The Kentucky Grazing School is a two day program consisting of classroom education and hands-on education and demonstrations. The Applied Master Grazer program is a multi-county program which is made up of three of four evening sessions spread out over the grazing season. County agents and local producers are able to choose topics to be covered in the programs.

Results

Participants of the Master Grazer program were asked to identify areas that they planned to modify to improve their operations as a result of attending one of the Master Grazer educational programs. Surveys show that after attending, 100% of participants planned on implementing changes on their farm. The top changes producers planned to implement were: increased use of stockpiled tall fescue, designing a watering system to provide ready access to any grazing paddock and developing more water sites, use of temporary electric fence to create more grazing paddocks and the use of additional high tensile fencing, increase access to shade, and renovating their pastures with legumes. All attendees believed they left with a better understanding of how to manage their grazing systems. Topics such as: the benefits of managed grazing systems, factors affecting plant growth, common forages for KY pastures, and management strategies of current forages to increase productivity of pastures showed the greatest growth in knowledge.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
307	Animal Management Systems

Outcome #5

1. Outcome Measures

Number of individuals reporting changes in knowledge, opinions, skills and aspirations related to impact of public policies on agriculture and the environment.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	26850

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Farming is a business and as such, is subject to different tax laws than the average homeowner. For most farming businesses the changing tax laws, required documentation, depreciation of equipment, tax implications for the Reserve Program (CRP) and tobacco buyout payments and other public policy decisions create a tax situation which cannot be learned from a pamphlet or from a disk purchased in a box.

What has been done

The Department of Agricultural Economics conducts professional in service training for tax preparers, CPAs, farmers, attorneys, and related persons on new federal income tax law, Kentucky state tax provisions, and ethics. This is the largest tax education program in Kentucky and one of the ten largest in the U.S.

Results

The Income Tax program hosted 26 seminar hours of information on taxes. The seminars covered basic income tax tips and ethics in relation to taxes. The program set a new record with over 2,000 participants gaining exposure to tax policies.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
604	Marketing and Distribution Practices

Outcome #6

1. Outcome Measures

Economic impact of compost bedded pack barns for dairy production

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	65

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a need in the dairy industry for management strategies that address critical quality and variance control factors that impact economic efficiencies, animal well-being, and environmental impacts. Compost bedded pack barns are a relatively new facility option for dairy producers. When managed properly, these facilities provide an economical, animal-friendly environment for dairy cows.

What has been done
An extensive field research project characterized 43 compost bedded pack barns in Kentucky. Animal, compost, and building design factors were recorded and analyzed.

Results
The economic impact of a compost bedded pack barn for an average (85 cows) dairy was estimated at an additional income of $18,000 annually with a potential capital investment savings of $60,000 per farm compared to freestall housing. With approximately 65 dairies in Kentucky now managing compost barns, the economic impact is $1,080,000 annually with $3,900,000 in capital savings. Given existing challenges with milk quality, animal health and well-being, financial capital availability, and waste management among Southeast dairy farms, compost bedded pack barn may likely play a key role in sustainability and survival of the dairy industry in this region because of the role this system can play in addressing each of these issues.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #7

1. Outcome Measures

New tools available for improved management of agronomic crops.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

It is important for wheat producers to get the most efficient use of their nitrogen inputs to keep costs down and improve crop productivity. Advances in precision fertilizer application technologies have made this a more viable management option, but systems must be optimized for each location where implementation is proposed.

What has been done

A remote-sensing technology that uses sensors to measure crop canopy conditions to determine precision applications of nitrogen was tested for use in Kentucky wheat crops. Since this is new technology, only two states had algorithms developed for use of the system. A new algorithm for use in Kentucky was developed and evaluated for its impact on yields and fertilizer usage.

Results

In field trials, the technology optimized for Kentucky increased yields by an average of 3.9 bushels per acre. The total amount of nitrogen used remained about the same, but is now varied over a field with some locations receiving more or less than others. With these averages and taking into account current wheat prices, producers implementing the technology can expect to get a return of about $20 per acre. This is the newest in a long line of improvements that have substantially improved the profitability of wheat in Kentucky.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

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 Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Methods used: Changes in knowledge skills, awareness and behavior; implemented practice change

See Outcomes 2 and 4 for evaluation results.

Key Items of Evaluation

Pre-post surveys; post surveys; case studies

See Outcomes 2 and 4 for evaluation results.

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Agricultural and Environmental Quality

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%	0%	19%	0%
102	Soil, Plant, Water, Nutrient Relationships	0%	0%	22%	20%
112	Watershed Protection and Management	3%	60%	19%	20%
123	Management and Sustainability of Forest Resources	20%	0%	0%	10%
131	Alternative Uses of Land	0%	10%	3%	0%
133	Pollution Prevention and Mitigation	0%	0%	19%	0%
135	Aquatic and Terrestrial Wildlife	0%	20%	0%	0%
136	Conservation of Biological Diversity	0%	0%	5%	0%
205	Plant Management Systems	25%	10%	0%	10%
211	Insects, Mites, and Other Arthropods Affecting Plants	0%	0%	0%	10%
215	Biological Control of Pests Affecting Plants	0%	0%	0%	10%
216	Integrated Pest Management Systems	0%	0%	0%	20%
403	Waste Disposal, Recycling, and Reuse	4%	0%	7%	0%
605	Natural Resource and Environmental Economics	48%	0%	6%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	35.0	1.0	10.0	8.5
Actual Paid Professional	40.0	4.0	13.7	16.7
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
560502	211387	464282	662143
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
543590	54441	4111975	396454
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

The University of Kentucky and Kentucky State University are engaged in a wide range of programs geared towards achieving greater harmony between agriculture, people, and the environment. All components of the research and extension focus on the broader goal of practicing agricultural and related disciplines in a manner consistent with improving sustainability of resources and protecting ecosystem integrity. Program examples include:

• Master Gardener Program consisting of 12-15 three-hour sessions related to gardening, resource management, botany, soils, pesticides and pesticide safety •Master Logger program consisting of three one-day sessions focusing on best management practices, safety, laws and regulations •Integrated Pest Management programs including programs aimed at homeowner application of pesticies and fertilizers. •Woodlot owner education program focusing on best management practices, harvesting, contracts, wood products and alternative forest products. •Water quality, Water Pioneer, daycamps, and forestry camp programs aimed at developing a better understanding af stewardship between youth and the environment. Agricultural and environmental research includes: •the influence of forest harvesting on hydrology and water quality •challenges of large mammal conservation and restoration •use of geospatial technologies for precision conservation •management systems to improve air and water quality at poultry, swine and dairy operations •fate and ecological effects of antibiotics and pesticides in agroecosystems •seed biogeography and dormancy •creation of tools for improved BMP management

•KSU Extension Programs will continue to support efforts related to policies to improve environmental quality •Gardendata.org •Organic Agricultural Programs

KSU research projects focusing on improving environmental quality including The KSU Fish Disease Diagnostic Laboratory which diagnosed 55 fish disease cases from private growers and recommended treatments that benefited the aquaculture industry in Kentucky

2. Brief description of the target audience

• General public •Community volunteers advanced in horticulture instruction and willing to give back to the community •Individual commercial loggers in Kentucky and those out of state wishing to do business in Kentucky •Woodlot owners •Farm owners and operators •Homeowners

3. How was eXtension used?

eXtension was used as an online resource by specialists and agents

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	309903	826921	155880	407289

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	56	56

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Graduate student research assistants
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Published research journal articles

Year	Actual
2011	56

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of individuals adopting practices that protect water quality.
2	Number of people utilizing forest management practices.
3	Number of acres upon which new or additional conservation practices are used.
4	Number of individuals adopting one or more practices related to conserving, sustaining and/or protecting soil resources.

Outcome #1

1. Outcome Measures

Number of individuals adopting practices that protect water quality.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	37562

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Environmental issues, healthy communities and personal health are a concern to all citizens. There is growth in populations across the state and new agricultural operations impacting the natural areas. The Kentucky River and other natural water sources, forested areas, green spaces in urban and rural settings are valuable to all communities. Residents must be made more aware through local observation and broad national media exposure to the impacts of this growth on the environment and on community health and well-being. Agriculture producers and advocates must provide solid examples of good stewardship.

What has been done
Aquaculture specialists have taken precautions in diagnosing fish diseases and recommending appropriate treatments for water.

Results
Accurately diagnosing fish diseases and recommending appropriate water treatments has an approximate value of $2500 per case to private fish producers. The non-private cases helped university researchers to successfully complete their research projects and helped state fish and wildlife agencies to successfully produce sufficient numbers of fish for stocking public waters. Water quality samples submitted to the Laboratory helped farmers and pond owners know how to treat their bodies of water to maximize fish growth and survival and prevent establishment of aquatic weeds. Using an estimated value of $1500 per water quality case, the 63 cases would have a value of approximately $94,000.00.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
133	Pollution Prevention and Mitigation
216	Integrated Pest Management Systems

Outcome #2

1. Outcome Measures

Number of people utilizing forest management practices.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	6495

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Forestry is a major industry in Kentucky, with half of the state's landscape being privately owned woodlands. The industry boasts an estimated $8 billion annually, thousands of jobs and a host of recreational opportunities. Extension provides a wealth of educational programs for those landowners who need information about forest management.

What has been done
A number of short courses have been created to provide enhanced educational opportunities for woodland owners. Kentucky Extension has sponsored these programs with several state forestry and water resource agencies. As a result, over 6,000 woodland owners have reported utilizing practices recommended by Extension.

Results
A total of 54 loggers were trained and obtained mandatory continuing education credits to maintain their Kentucky Master Logger designation through participation in two timber cruising programs in Carter and Allen counties in 2010/2011.The Kentucky Master Logger Program taught by approved trainers introduced these loggers to analytical tools available for use in analyzing timber sale value. Maps & photos were discussed for use in determining acres, maximum skidding distances, average skidding distances, etc. The training resulted in cost savings for

logging firms and an improvement in logging professionalism and efficiency resulting in larger profits for logging firms and revenue generation for landowners. All participants indicated an increase in knowledge regarding timber estimation. Participants provided 1.04 million dollars in timber income to a total of 86 landowners. Further 41 firms maintained their capacity to continue operations providing 128 workers with employment. Total impact to the local economic from harvest and sawmilling of harvested material yielded 8.7 million to local economies.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources

Outcome #3

1. Outcome Measures

Number of acres upon which new or additional conservation practices are used.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	529613

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Given the large number of cattle farmers in Kentucky, there is a need to educate them on best management practices. Moreover, there is a need for educational program to improve grazing practices in beef, dairy, goat and Sheep herds.

What has been done
The Master Grazer Educational program components were conducted in 13 locations across the state of Kentucky. The Kentucky grazing school is a two day program consisting of classroom education and hands-on education and demonstrations. Educational programs included Kentucky Grazing Schools, the Applied Master Grazer program, and regional grazing networks. The Applied Master Grazer program is a multi-county program which is made up of three of four evening sessions spread out over the grazing season. County agents and local producers are able to choose topics to be covered in the programs. Regional grazing networks are made up of a

series of pasture walks throughout the grazing season. Pasture walks are in field sessions held on a farm that can be showcased for the topic(s) being discussed. Network participants receive a monthly newsletter throughout the grazing season.

Results

Approximately 288 producers from 68 Kentucky counties participated in the program between July 2010 and June 2011.

Participants of the Master Grazer program were asked to identify areas that they planned to modify to improve their operations as a result of attending one of the Master Grazer educational programs. A total of 60 producers attended a grazing school this year representing over 2,364 livestock animals and 11,631 acres, impact over 24,800 animals and 45,200 acres throughout Kentucky. Surveys show that after attending, 100% of participants planned on implementing changes on their farm. The top changes producers planned to implement were: increased use of stockpiled tall fescue, designing a watering system to provide ready access to any grazing paddock and developing more water sites, use of temporary electric fence to create more grazing paddocks and the use of additional high tensile fencing, increase access to shade, and renovating their pastures with legumes. All attendees believed they left with a better understanding of how to manage their grazing systems.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
123	Management and Sustainability of Forest Resources
131	Alternative Uses of Land

Outcome #4

1. Outcome Measures

Number of individuals adopting one or more practices related to conserving, sustaining and/or protecting soil resources.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	42229

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Urban areas have many opportunities to increase the access of locally grown food to neighborhoods by utilizing vacant or abandoned lots. Presently, there are more than 4000 lots that could potentially be used for vegetable production in the Louisville area and most of these lots are located in limited resource communities where access to fresh fruit and vegetables is a challenge. Many of these lots contain soils that are or, perceived to be, contaminated with toxins especially heavy metals (lead).

What has been done
Extension, at the request of private citizens, church and community leaders, local government officials and others, has collected soil samples on many of these sites.

Results
Many of the sites were found to be contaminated with some level of lead. Extension processed over 100 samples last year requesting heavy metals testing. Many of these samples were collected by individuals and delivered to the Jefferson County office. Extension staff have encouraged the public to be aware of the potential risk of lead associated with all property in Louisville Metro and as a result there has been more than double the request from the previous year.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
123	Management and Sustainability of Forest Resources
131	Alternative Uses of Land

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Increased awareness; implemented practices recommended by Extension (See Outcomes 2 and 3 for evaluation results).

Key Items of Evaluation

Surveys, follow-up interviews
See Outcomes 2 and 3 for evaluation results

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Food Safety

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	4%	0%	44%	0%
703	Nutrition Education and Behavior	38%	50%	0%	0%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	1%	0%	56%	0%
724	Healthy Lifestyle	57%	50%	0%	0%
	Total	100%	100%	100%	0%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	12.0	0.0	2.0	0.0
Actual Paid Professional	12.0	2.5	1.7	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
186834	147845	201389	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
181196	13813	733148	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

-Training and certification workshops will be conducted for home-based microprocessors
-Research conducted to create new technologies and improve best practices to reduce contamination of food pathogens and toxins
-Research is developing better detection methods for monitoring food risks
-Educational programs will be targeted toward parents and others who prepare food in the home
-Educational programs will be directed toward young children and teens on basic cleanliness such as hand washing

KSU prepares and distributes monthly newsletters containing information on various topics such as nutrition, food safety, basics cooking information, and other subjects

2. Brief description of the target audience

-extension agents
-food producers
-food processors
-parents
-volunteer leaders
-youth and children
-consumers

3. How was eXtension used?

eXtension materials were reviewed to potentially strengthen programs

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	112263	64892	152117	22800

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

Year: 2011
Actual: 3

Patents listed
"Online, continuous sensor and method for curd moisture content control in cheese making." # 7,892,584
"Method of improving cheese quality." # 7,880,881
"Security monitoring system for a bulk foodstuff transport container." # 7,886,959

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	2	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles

Year	Actual
2011	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of individuals who experience a change in knowledge, opinions, skills or aspirations regarding the safe production, storage, handling, or preparation of food (safe preservation techniques, hand washing, following time and temperature guidelines)
2	Number of individuals who implement recommended practices for the safe production, storage, handling or preparation of food (safe preservation techniques, hand washing, following time and temperature guidelines)

Outcome #1

1. Outcome Measures

Number of individuals who experience a change in knowledge, opinions, skills or aspirations regarding the safe production, storage, handling, or preparation of food (safe preservation techniques, hand washing, following time and temperature guidelines)

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	59431

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Many consumers today are unaware of the safety of their food. Canning is a perfect way to manage the ingredients in recipes to ensure that your family not only gets the garden fresh flavor of fresh produce, but that they also avoid any undesirable pathogens. Gardening and home canning can also save families money on their grocery bill.

What has been done
To assist families in combating food-borne illnesses as well as the economic crisis, Extension has offered program that provide information on nutrition and food safety. Kentucky State University also promoted food safety among students through its P.A.C.T. (Pathways and Access to Careers in Technology) Program. Students conducted tests on various foods, and investigated the importance of vitamins. These experiments enhanced their understanding of human health and nutrition.

Results
Based on classes conducted in Boyle county, 40% of the participants had poor knowledge of food preservation prior to the hands-on demonstrations; while another 40% of participants' knowledge was considered to have fair knowledge of the subject. As a result of the series of food preservation classes, 100% left with an excellent level of knowledge on canning and freezing. 90% of participants believed that learning such skills would allow them to save money; while 100% of participants believe that food preservation will save them time. All participants indicated that they were looking forward to preserving food at home (e.g., canning, freezing).

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

Number of individuals who implement recommended practices for the safe production, storage, handling or preparation of food (safe preservation techniques, hand washing, following time and temperature guidelines)

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	39806

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
With the high cost of food, there is a need for more Kentuckians to develop the skills to grow, preserve and prepare their own food. Many residents are unaware of how to grow and process their own foods.

What has been done
Extension has provided a number of programs on food processing and preservation.

Results
The Food Systems Innovation Center has aided over 50 medium to small food processors through one on one consultations, microbial analysis, and through economic and business development. Currently, the FSIC has aided in the development of 11 new products which are currently in the market place. A grant, recently obtained from the Kentucky Agricultural Development Board will help the Center to reach a larger, more diverse audience so that more products can reach the market place. The main goal of the FSIC will be to make the locally produced, Kentucky Proud products safer and produced in compliance with existing food laws.

Also, 106 residents have demonstrate at least one correct kitchen readiness skill, such as measuring ingredients, using proper cooking methods, using knives, equipment, or small utensils, or following a recipe, with confidence

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
724	Healthy Lifestyle

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Skill development, change in behavior (See Outcomes 1 and 2 for evaluation results)

Key Items of Evaluation

Surveys, focus groups, one-on-one interviews
See Outcomes 1 and 2 for evaluation results

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Climate Change

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
121	Management of Range Resources	0%	0%	22%	0%
123	Management and Sustainability of Forest Resources	0%	100%	43%	0%
141	Air Resource Protection and Management	0%	0%	13%	0%
403	Waste Disposal, Recycling, and Reuse	0%	0%	22%	0%
604	Marketing and Distribution Practices	100%	0%	0%	0%
	Total	100%	100%	100%	0%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	0.0	1.0	0.0
Actual Paid Professional	0.0	1.3	2.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
0	69204	64470	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	13813	567810	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

-Emergency preparedness plans will be implemented with be prepared for all Extension offices
- The Agricultural Weather Center will supply information on temperature and moisture conditions to guide agricultural operations
-Economists will conduct educational programs for Extension agents and agricultural producers on ways to reduce risks
-Research on the impact of climate change on the ecology of plant pests and diseases
-Research assessing the impact of climate change on pasture ecology
-Creation of new technologies and best management practices for mitigating greenhouse gas emissions and managing production systems in a changing climate

2. Brief description of the target audience

-extension agents
-extension office staff
-agricultural producers
-community leaders
-general public

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	285	15931	0	0

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

Patent Applications Submitted

Year: 2011
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	5	5

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles

Year	Actual
2011	5

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of producers utilizing new marketing opportunities
2	Number of incidences of when accurate weather information assisted producers in avoiding crop and livestock damage or loss

Outcome #1

1. Outcome Measures

Number of producers utilizing new marketing opportunities

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	6362

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
As we move away from tobacco dependence, producers and youth need alternative income/projects. Many Kentucky counties are well suited for expansion into livestock and alternative agriculture. In order to increase the profitability and stability markets need to be further developed.

What has been done
Extension has provided producers with information that has increased their awareness and skills on marketing various products.

Results
With grain acreage increasing approximately 25%, a three session Kentucky Grain Marketing Short course was held with 20 producers from Taylor County participating. According to a post survey: 91% increased their understanding of the price discovery process; 91% now understands that cost of production is the most important piece of information in grain marketing; 82% have increased their understanding of grain contracts; and 27% of the respondents plan on opening a brokerage account as a result of the grain marketing program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
604	Marketing and Distribution Practices

Outcome #2

1. **Outcome Measures**

Number of incidences of when accurate weather information assisted producers in avoiding crop and livestock damage or loss

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Increased awareness; change in practices (See Outcome 1 for program evaluation results).

Key Items of Evaluation

Pre-post surveys; post assessment tools

See Outcome 1 for program evaluation results.

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Sustainable Energy

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
204	Plant Product Quality and Utility (Preharvest)	8%	0%	29%	0%
206	Basic Plant Biology	0%	0%	33%	0%
402	Engineering Systems and Equipment	36%	30%	0%	0%
511	New and Improved Non-Food Products and Processes	0%	0%	30%	0%
512	Quality Maintenance in Storing and Marketing Non-Food Products	0%	0%	8%	0%
723	Hazards to Human Health and Safety	56%	70%	0%	0%
	Total	100%	100%	100%	0%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	5.4	0.0	5.0	0.0
Actual Paid Professional	5.0	1.5	6.6	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
93417	84932	446623	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
90598	13813	1976541	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

The pilot project in the production of switchgrass will continue with an expansion of the acres produced. Growing conditions will be observed to determine the tolerances of this warm season grass. Work will continue with the electric company to determine the best form and blend to be used with coal. Research on the conversion of switchgrass to ethanol will continue. Other venues for promoting sustainable energy will be explored.

2. Brief description of the target audience

-producers
-extension agents
-electric company representatives
-other researchers and extension specialists

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	55450	0	12486	0

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

Patent Applications Submitted

Year: 2011
Actual: 2

Patents listed
"Fungal desaturases and related methods" # 8,053,633
"Method for Increasing Renewable Oil Production" application # 138206361

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	10	10

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles

Year	Actual
2011	9

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	The number of individuals who will become knowledgeable in the production of switchgrass as a biofuel

Outcome #1

1. **Outcome Measures**

The number of individuals who will become knowledgeable in the production of switchgrass as a biofuel

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Increased awareness; changed production practices

Key Items of Evaluation

Pre-post surveys

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Childhood Obesity

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
609	Economic Theory and Methods	0%	0%	25%	0%
703	Nutrition Education and Behavior	22%	50%	75%	50%
724	Healthy Lifestyle	78%	50%	0%	50%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	30.0	0.0	0.5	0.0
Actual Paid Professional	29.0	3.0	0.4	2.5
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
560502	163573	34664	118412
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
543590	34127	55999	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

- Jump into Food and Fitness (JIFF)
- Literacy, Eating and Activity for Preschool and Primary Youth Health (LEAP) reached 19,895 youth with nutrition and physical activity information
- KSU FDM Program helped coordinate Lunch and Learn Classes to teach proper nutrition.
- Small Steps for Health and Wealth
- Second Sunday, an Extension program that emphases physical activity in the community
- 4-H after school programs
- 4-H day camp and overnight camp
- The Longest Day of Play
- KSU researchers examining food consumption and physical activity as they relate to childhood obesity
- Get Moving Kentucky
- EFNEP for limited resource families
- FSNEP for Food Stamp recipients
- Pilot testing of two new healthy diet interventions aimed at improving the food choices of middle school students

Many of the diet, nutrition and physical activity programs were directed toward family members as they influence food choices, exercise, etc. of the children in the family.

2. Brief description of the target audience

-children
-youth (Middle and High School)
-extension agents
-teachers
-parents

3. How was eXtension used?

Agents and specialist utilized online resources

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	186636	13638	265397	19626

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

Year: 2011
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	2	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Published research journal articles

Year	Actual
2011	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of children who experience a change in knowledge, opinion, skills, or aspirations regarding lifestyle changes (diet, exercise, etc.) that improve personal health.
2	Number of pre-school children reporting making lifestyle changes for the purpose of improving their health.
3	Number of elementary aged children reporting making lifestyle changes for the purpose of improving their health.

Outcome #1

1. Outcome Measures

Number of children who experience a change in knowledge, opinion, skills, or aspirations regarding lifestyle changes (diet, exercise, etc.) that improve personal health.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	138966

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Trust for Americans Health reports that KY has the 5th highest level of adult obesity in the nation at 25.6%, the 3rd highest overweight high school student levels at 14.6% and the 3rd highest overweight levels for low-income children ages 2-5 at 16.8%. The state also spent an estimated $282 per person in 2003 on medical costs related to obesity. It is evident that lifestyle changes such as eating healthier diets and increased level of physical activity are essential for a healthier Kentucky.

What has been done
Kentucky Extension continues to host programs that promote physical activity and healthy eating habits, such as Exploring My Pyramid with Professor Popcorn. In addition, Kentucky State University's Center for Family Nutrition and Wellness Education, also engaged students in a nutrition and fitness curriculum.

Results
After completing the Exploring My Pyramid program, 7,344 eat different kinds of vegetables most days of the week or every day, while 7,429 eat a variety of fruits most days of the week or every day.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

Number of pre-school children reporting making lifestyle changes for the purpose of improving their health.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	7224

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Trust for Americans Health reports that KY is the 3rd highest overweight levels for low-income children ages 2-5 at 16.8%. The state also spent an estimated $282 per person in 2003 on medical costs related to obesity. It is evident that lifestyle changes such as eating healthier diets and increased level of physical activity are essential for a healthier Kentucky.

What has been done
Extension continues to host programs that promote physical activity and healthy eating habits, such as Jump into Food and Fitness.

Results
As a result of the Jump into Foods and Fitness Program, a total of 4477 adopted at least one new physical activity habit, while 5,917 adopted at least one new health and/or nutrition habit

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #3

1. Outcome Measures

Number of elementary aged children reporting making lifestyle changes for the purpose of improving their health.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	13093

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Trust for Americans Health reports that KY is the 3rd highest overweight levels for low-income children ages 2-5 at 16.8%. The state also spent an estimated $282 per person in 2003 on medical costs related to obesity. It is evident that lifestyle changes such as eating healthier diets and increased level of physical activity are essential for a healthier Kentucky.

What has been done
Extension continues to host programs that promote physical activity and healthy eating habits, such as Jump into Food and Fitness.

Results
As a result of Extension programing, a total of 4,474 youth choose healthy snacks when having a choice. In addition, over 9,000 reported being physically active most days of the week or every day.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Knowledge gained, increase in favorable practices; behavior change (See Outcomes 1-3 for evaluation results)

Key Items of Evaluation

Surveys (pre-post, post-pre); focus groups; interviews
See Outcomes 1-3 for evaluation results.