

2014 University of Missouri Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

University of Missouri Extension (MU Extension) had a very productive year in achieving its goals set out in the 2014 plan of work. MU Extension's 2014 programs addressed such issues as: the growing obesity problem in Missouri; building a sustained holistic economic development model in Missouri that addresses the need for vibrant communities, retention of jobs, and viable businesses; food productivity and safety in Missouri's agricultural arena; and building tomorrow's leaders through our 4-H Youth program.

Our stakeholders continue to articulate the need for more programming from us at a time of diminishing budget. We continue to incorporate the use of technology in our delivery systems in order to leverage the human capacity that we have. MU is contributing to programming efforts in eXtension and has developed a more comprehensive and accessible website for our stakeholders. We are also seeking alternative funding from grants, gifts, and fee generation to further leverage the resources that we receive from our state, federal, and county partners.

Our goal is to be reliable, responsive and relevant. We accomplished that goal in 2014 by providing research-based knowledge to Missourians that was aligned with their priorities of jobs, health, and education.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	235.3	0.0	0.0	0.0
Actual	267.0	0.0	0.0	0.0

II. Merit Review Process

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

- Internal University Panel
- External Non-University Panel

2. Brief Explanation

In addition to reviewing the stakeholder input from 114 counties, regional and state faculty surveyed current literature to identify state-wide demographics, national and state trends, and discipline specific research related to program effectiveness. Based on this review, state-wide priority needs were identified and programs in response to those priorities were developed by faculty. The program priorities, along with their program logic models, were then reviewed by the appropriate state program leader to assure that the programs are both relevant and of high quality.

State-wide program priorities will be utilized by regional faculty as they develop a local programming response to their county's identified needs. The resulting proposed county program plan will then be taken to the county council for their acceptance. Once approved, the programming will be delivered and the impact evaluated.

By establishing this ongoing merit review process of: stakeholder needs identification; program response by faculty; stakeholder feedback; and outcome assessment, the quality and relevance of programs will be maintained.

III. Stakeholder Input

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

- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey specifically with non-traditional groups
- Survey specifically with non-traditional individuals

Brief explanation.

University of Missouri Extension has gathered opinions of Missouri residents in a variety of ways to assist us in determining the critical issues of strategic importance. Our goals in developing the methodologies for the stakeholder input process were to: diversify the audiences in order to gain a better perspective on the reach and effectiveness of our programs; to diversify the gathering process so that we could utilize the feedback for both program prioritization and also to gain knowledge as to preferred delivery methods as well as general awareness of our programs; and, finally, to gather some program specific information and diversity needs information in a more substantive way in order to gain a better understanding of the issues underlying the needs in order for us to be more effective in our programming response.

The methods used in our stakeholder input gathering were as follows:

- Community Conversations
- Diversity Discussions
- Web-based Survey
- County and Regional Needs Assessments
- Meetings with State Agencies

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

Brief explanation.

See 1.

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
- Meeting with traditional Stakeholder individuals
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional groups
- Meeting specifically with non-traditional individuals
- Survey specifically with non-traditional individuals

Brief explanation.

See 1.

3. A statement of how the input will be considered

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

Brief explanation.

{NO DATA ENTERED}

Brief Explanation of what you learned from your Stakeholders

Our stakeholders continue to articulate the need for more programming from us at a time of diminishing budget. We continue to incorporate the use of technology in our delivery systems in order to leverage the human capacity that we have. MU is contributing to programming efforts in eXtension and has developed a more comprehensive and accessible website for our stakeholders. We are also seeking alternative funding from grants, gifts, and fee generation to further leverage the resources that we receive from our state, federal, and county partners.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
9055768	0	0	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	9055768	0	0	0
Actual Matching	9055768	0	0	0
Actual All Other	0	0	0	0
Total Actual Expended	18111536	0	0	0

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	Home Horticulture and Environment
2	Livestock Production System - Global Food Security and Hunger
3	Integrated Crop Management Systems - Global Food Security and Hunger
4	Resource Protection and Management
5	Profit Focused Agriculture
6	Managing Forages for Profitable Animal Production - Global Food Security and Hunger
7	Creating Simple Environments for Positive Youth Development
8	Creating Collaborative Environments for Positive Youth Development
9	Creating Complex Environments for Positive Youth Development
10	Volunteer Development
11	Built Environments and Sustainable Energy
12	Strengthening Families
13	Personal Financial Management
14	Food Safety
15	Nutrition, Health and Physical Activity
16	Ensuring Safe Communities
17	Sustainable and Viable Communities
18	Business Development

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Home Horticulture and Environment

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	15%			
205	Plant Management Systems	20%			
211	Insects, Mites, and Other Arthropods Affecting Plants	15%			
212	Diseases and Nematodes Affecting Plants	15%			
213	Weeds Affecting Plants	15%			
216	Integrated Pest Management Systems	20%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	9.0	0.0	0.0	0.0
Actual Paid	12.0	0.0	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
481812	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
441239	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Master Gardener training remains a major activity under this program area. Online core training was made available to the public for the first time in fall of 2013 with a total of 6 trainees. In 2014, 25 enrolled in the spring training class and 59 in the fall. Additional areas of focus included advanced Master Gardener training, Garden 'N Grow training and workshops for garden center employees. Other activities include the Plants of Merit and HortLine programs in cooperation with Missouri Botanical Gardens, homeowner workshops, Lifespan Learners Series, Responsible Home Horticulture Series, booths at home shows and fairs, Plant a Row for the Hungry, Horticulture Therapy in Nursing Homes and the Home*A*Syst Program.

2. Brief description of the target audience

Individuals with an interest in gardening are the ultimate target audience of this program. The target audience, however, is diverse and widely dispersed. To reach an audience of this nature, MU Extension will need to use several community multipliers of information. One highly important audience will be the Master Gardener volunteers. After receiving training, Master Gardeners contribute volunteer hours to assist with dissemination of horticultural information through speaking engagements, workshops, information booths, youth programs, Extension Center hot lines, demonstration plantings and other activities. Youth groups, including 4-H, are another important target audience. An effort was made this past year to enroll more youth in the Garden 'N Grow program.

3. How was eXtension used?

MU Extension faculty served on various horticulture Communities of Practice and answered "Ask an Expert" questions. An eXtension grant from the USDA Specialty Crop Grant Program was secured to collaborate with extension specialists at eastern universities to develop and launch a comprehensive apple web site with new content (video, photos, recommendations, 100 FAQ's, Ask an Expert, cultivar and rootstock descriptions, etc.), for commercial producers, extension educators, Master Gardeners, and home gardeners.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	22341	610761	1955	2375

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

Patent Applications Submitted

Year: 2014
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	4	9	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Provide in-service training session (s) for regional Extension specialists on an annual basis.

Year	Actual
2014	0

Output #2

Output Measure

- Develop or revise guide sheets a year for regional extension specialists to use in producer meetings.

Year	Actual
2014	28

Output #3

Output Measure

- Print and electronic newsletters devoted to pest and horticulture crop management will be developed and distributed to regional specialists and other clientele.

Year	Actual
2014	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Master Gardeners, garden center employees, retired persons and home gardeners will increase their knowledge of basic plant growth, fertility, plant care, varieties, diseases.
2	Youth will improve their gardening skills and awareness of where food comes from through the Garden & Grow program.
3	Increase the number of Master Gardner volunteers trained and involved in improving the quality of their community.

Outcome #1

1. Outcome Measures

Master Gardeners, garden center employees, retired persons and home gardeners will increase their knowledge of basic plant growth, fertility, plant care, varieties, diseases.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	595186

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The public's demand for gardening knowledge has never been greater. It is both frustrating and discouraging when gardeners are selecting poorly adapted plants or follow improper plant care practices for their yards and gardens. Awareness of sources of information on proper plant selection and care will contribute to gardening success and the health benefits derived from it. Also, proper plant selection and care reduces plant stress, which then reduces the amount of inputs necessary to maintain plant health. This can lead to a reduction in fertilizer and pesticides necessary to maintain plant health.

What has been done

Through Master Gardener (MG) training and volunteer activities of MG, newsletter, media releases, Nursery Association Certification training, greenhouse short courses and web guide access, thousands of Missourians received information on plant selection and culture. We hosted a Native Plant Field Day and a Tomato Festival.

Results

In 2014, there was a 30% increase of internet-based MU horticulture extension publications. This equates to 595,186 valid "hits" on horticulture publications. The most popular horticulture guides were on composting, home garden tomatoes, and lighting interior plants. It is apparent that thousands of Missourians received information to help them improve their gardening success. If 25% of those who accessed web-based horticulture information increased their purchasing of plants, gardening supplies and landscape services by only \$50, this would translate into a \$7.3 million increase in sales.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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101	Appraisal of Soil Resources
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Diseases and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #2

1. Outcome Measures

Youth will improve their gardening skills and awareness of where food comes from through the Garden & Grow program.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	737

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Gardening programs aimed at youngsters (e.g., Garden 'n Grow), are intended to cultivate strong skills in science through the use of the curriculum. The goals are also for youth to experience gardening in a positive and fun method, to enjoy the feeling of success with their gardening efforts, and to have the satisfaction of sharing their harvested produce with others in need. Youth also learn to produce healthy food and the importance of fresh produce in human nutrition.

What has been done

During 2014, there were three Garden 'n Grow programs throughout Missouri, in which volunteers worked with school children to help them plant, manage and harvest vegetable plots. Additionally, a new program called the Second Grade Garden Program was initiated in Butler, Ripley and Carter counties.

Results

37 children participated in the Garden 'n Grow educational program in 2014. 700 children participated in the Second Grade Garden Program in 2014.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Diseases and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #3

1. Outcome Measures

Increase the number of Master Gardner volunteers trained and involved in improving the quality of their community.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	284

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The beneficial effects of gardening on human quality of life are well documented. Among other benefits, home gardening improves nutrition, reduces energy costs, encourages physical activity and contributes to psychological well-being. Missourians who garden are likely to derive these benefits for their entire lives. There continues to be tremendous demand in the general public for gardening information. The Master Gardener Program was designed to educate individuals to serve as paraprofessionals to assist University of Missouri Extension disseminate research-based information pertaining to gardening throughout their county and to improve the knowledge base among home gardeners in their community.

What has been done

Master Gardener core training was conducted at numerous locations in Missouri. Additionally, core training was available as an online course both spring and fall.

Results

284 individuals went through Master Gardener core training, both online and in person.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Diseases and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

A major factor affecting program outcome lies in inadequate staffing. The void created by the retirement of our nursery State Specialist several years ago has yet to be filled. Additionally, most state Extension Specialists in Horticulture also have responsibilities in teaching, research, and extension, therefore, have limited time to devote to this program. Regional Horticulture Specialists have responsibilities in up to 13 counties and in multiple program areas. Budget constraints due to the poor economy and low tax revenues have restricted extension programming. The economic conditions over the past year have undoubtedly influenced the gardening habits of Missourians.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

During the fall of 2014, a new web-based evaluation was developed for all individuals who participated in core training, either "in person" or online. The evaluation instrument sought to assess knowledge gained through core instruction in plant growth and development, plant propagation, soils and plant nutrition, vegetable gardening, fruit production, woody and herbaceous ornamental plants, pruning techniques, landscape design, lawn care, pest management and pesticide safety. At the time of filing this report, results for 2014 are still being compiled by the University's Assessment Resource Center.

Key Items of Evaluation

As a result, Missourians accessing web-based, research based information from MU Extension, have educated themselves on how to improve their gardening success. It is estimated that as a result of this, consumers made more informed decisions resulting in purchasing of plants, gardening supplies and landscape services, resulting in a \$7.3 million increase in sales.

During calendar year 2014, 284 individuals completed Master Gardener core training. Additionally, Master Gardeners donated more than 100,000 hours of volunteer service this past year. Using estimates from the Corporation of National and Community Service, these hours represent a \$2.26 million value this past year in support of University of Missouri

Extension horticulture activities.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Livestock Production System - Global Food Security and Hunger

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	20%			
302	Nutrient Utilization in Animals	40%			
303	Genetic Improvement of Animals	10%			
307	Animal Management Systems	25%			
308	Improved Animal Products (Before Harvest)	5%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	15.0	0.0	0.0	0.0
Actual Paid	21.0	0.0	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
843171	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
772170	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

A) The learner-focused outcomes of this program will expand the scope of the Missouri Show-Me-Select Replacement Heifer Program. These outcomes include: 1) Veterinarians, farmers, and allied industry representatives will acquire knowledge and skills to aid in the successful adoption and implementation of existing management practices to improve beef heifer development; 2) Practicing veterinarians, producers, and future professionals will acquire new knowledge and skills to aid in the adoption of emerging biotechnologies in beef heifer development, including estrus synchronization and artificial insemination; 4) Practicing veterinarians and producers will be able to identify and discuss the economic implications of implementing production practices associated with the Show-Me-Select Replacement Heifer Program; and, 5) Participating producers will develop a plan that establishes the Show-Me-Select Replacement Heifer Program as a producer owned and managed system.

B) The MO-Pork program will include the following activities: Promotion of efficient production and management practices (Pork Industry Handbook, MU guide sheets and Midwest Plan Service Handbooks); National Swine Nutrition Guide (NSNG); Use of Manual 144/202, "The Missouri System of Swine Production"; On-farm data collection used to evaluate production and economic endpoints; Focused Management Schools for MO-Pork participants, artificial insemination course, Back to the Basics: Farrowing School, Sow Manager's Conference, Pigs to Plate: Adventures in Meat Quality Seminar, Health Summit, finishing short course, nursery management course, ventilation short course; Delivery of Pork Quality Assurance Program for MO-Pork participants; Delivery of new technologies in the swine industry to MO-Pork participants; Computer models/PDA record keeping programs; World Pork Expo and other conferences; Education about niche production markets and specialization opportunities; Media coverage of the MO-Pork program; Farm visits; On-farm research trials; Workshops; Meetings; and Consultation.

2. Brief description of the target audience

(A) The audiences targeted in this program are farmers across Missouri actively involved in cow-calf production and marketing. There are no limitations placed on the program in terms of farm or size of cow-herd. The program to date has involved herds as small as 8 cows and as large as 6,000 cows. Numerous sectors of the Missouri livestock industry come together as a result of this program, including University of Missouri Extension, the Division of Animal Sciences, the University of Missouri College of Veterinary Medicine, the Commercial Agriculture Program, the Missouri Beef Cattle Improvement Association, the Missouri Cattlemen's Association, the Missouri Department of Agriculture, and the Missouri Livestock Marketing Association.

(B) The target audience includes people who own swine operations, work on swine farms, or provide technical support to people who own or work on swine farms (e.g., veterinarians, feed dealers). In addition, MO-Pork will target beginning Missouri pork producers, expanding Missouri pork producers, and industry personnel such as Missouri grain producers (interested in adding value to their crops).

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	7634	15320	2747	3080

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

Year: 2014
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	2	6	8

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Provide in-service training session(s) for regional Extension specialists on an annual basis.

Year	Actual
2014	23

Output #2

Output Measure

- Regional and state specialists will conduct demonstrations on an annual basis.

Year	Actual
2014	23

Output #3

Output Measure

- Regional specialists will assist with producer sales.

Year	Actual
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2014 15

Output #4

Output Measure

- Develop or revise guide sheets on an annual basis for regional Extension specialists to use in producer meetings.

Year	Actual
2014	2

Output #5

Output Measure

- Develop or revise manual(s) on an annual basis for regional Extension specialists to use in producer meetings.

Year	Actual
2014	3

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Participants will maintain or increase livestock production efficiencies and enhance marketing opportunities resulting in improved economic viability and profitability for their operation.
2	Participants will acquire knowledge and skills to aid in the successful adoption and implementation of existing management practices or emerging technology to improve livestock production efficiency and productivity.
3	Annual economic impact to the state's economy from improvements on livestock production.

Outcome #1

1. Outcome Measures

Participants will maintain or increase livestock production efficiencies and enhance marketing opportunities resulting in improved economic viability and profitability for their operation.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	2035

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Agriculture is Missouri's number one industry. The main issue for Missouri agriculture is the freedom to farm as well as maintain a competitive infrastructure. Agriculture is Missouri's number one driver of the state's economy. Missouri ranks 6th in the U.S. in total number of beef cows and calves in production, and the sale of cows and calves contribute \$1.7 billion to the state's economy. The swine industry represents over \$800 million contributed to the state's economy, or 12% of all commodities produced in Missouri. Agriculture is important to the state's economy because as producers purchase inputs for their operation, hire and pay employees, etc., they drive not only the local rural economy but the entire state's economic infrastructure through jobs and services so that we all benefit. As the agricultural industry embraces change and accommodates what consumers' desire, then all facets of the Missouri economy will benefit. The audiences targeted in this program include Regional Extension Faculty in Livestock, Ag Business, Natural Resource Engineering, Agronomy and Youth Development, veterinarians, and producers across Missouri that are actively involved in cow-calf production and marketing. Technology transfer, with respect to management practices, involved in the program, is not size dependent but rather producer dependent in terms of introducing a fundamental change in approach to management and marketing that impacts a producer's individual profitability profile.

What has been done

The Missouri Show-Me-Select Replacement Heifer Program was designed to improve reproductive efficiency of beef herds in Missouri and increase individual farm income. The program objectives include: 1) a total quality management approach for health and management of heifers from weaning to late gestation; 2) increased marketing opportunities for, and added value to, Missouri raised heifers; 3) the creation of reliable sources of quality commercial and purebred replacement females.

The MO-Pork Program offered workshops, demonstrations, seminars, web pages, materials and

conferences this past year that were attended by more than 910 swine producers. The examples include National Swine Nutrition Guide and formulator, Nutrient Management formulators, Pork Quality Assurance Plus, Growth and Quality Barrow Classic, Pork Bridge, Sow Bridge, Swine Institute, Pork Profit Seminars, Feed Efficiency Conference and many individual consultations. In addition, on-farm demonstrations and applied research efforts have allowed producers to actually visualize the importance of adapting new technology on the operation. Some additional information on the Missouri Swine Resource Guide, Nutrition Guide and By-product Feed Price Report is located on the webpage at www.agebb.missouri.edu/swine. The webpage gets more than 35,000 hits annually.

Results

The Show-Me-Select Replacement Heifer Program is the first comprehensive state-wide, on-farm beef heifer development and marketing program in the U.S. Participation in the program from 1997-2014 involved 116,034 heifers on 805 farms across Missouri, 257 veterinarians, 10 regional extension livestock coordinators, and 17 regional extension livestock specialists. The marketing component of the program over this period involved 133 sales at 10 locations. During this time 28,785 heifers were sold through Show-Me-Select Replacement Heifer Program sales with gross receipts of \$38,528,875. Total net impact on Missouri's economy from the 18 years of the Show-Me-Select Replacement Heifer Program and Sales exceed \$90 million. Producers from 103 of Missouri's 114 counties (91%) have enrolled heifers in the program, and 64 counties in Missouri (56% of the total) list the Show-Me-Select Replacement Heifer Program as a priority program for their county in the their current Program of Work.

The MO-Pork Program is focused on addressing the following Knowledge Areas: 301, 302, 307 and 308. Providing technological advantages through educational materials, development of the National Swine Nutrition Guide, Least Cost diet formulator, and Manure Nutrient optimizer has provided a huge economic advantage to pork producers who will change dietary composition of feeds based on feed ingredient quality, acquisition prices, and fertilizer value. Computerized feeding programs enable swine producers to personally adapt diets as well as be knowledgeable about performance parameters. Feed ingredient prices can fluctuate greatly and altering commodity grain inclusion rates using the By-product Feed Price Report and the National Swine Nutrition Guide Least Cost Diet Formulator has resulted in an average 27% reduction of feed cost inputs for Missouri Pork Producers creating an economic impact for Missouri of almost \$92 million annually.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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)

Outcome #2

1. Outcome Measures

Participants will acquire knowledge and skills to aid in the successful adoption and implementation of existing management practices or emerging technology to improve livestock production efficiency and productivity.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	445

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Continuation of low adoption rates of best management practices in the U.S. will ultimately erode the competitive position of the U.S. cattle industry. Other countries are adopting new technologies for animal production more rapidly than the U.S. Unless owners of commercial and purebred cowherds aggressively implement reproductive and genetic improvement, the U.S. will lose its competitive advantage in production of high quality beef.

Feed ingredients have continued to have greater price volatility, therefore, refining and using technology strategies are extremely important for the sustainability of Missouri swine producers. Technologies that have been adopted by Missouri pork producers are feed ingredient quality analysis, smart phone technologies and computerized feed formulations. This past year has been very good to the swine industry, therefore, Missouri's economy has not been hurt due to the fact agriculture is profiting and spending money to hire employees and make purchases associated with maintenance and repair.

What has been done

A number of management procedures have been cited to have a significant impact on beef herds and their resulting performance measured by reproduction and productivity. Only a limited percent of beef cattle operations use these management procedures. Best management practices for replacement beef heifers, when collectively viewed as a "program," can assist producers more effectively in managing reproduction, production, and marketing.

Missouri pork producers have gained hands-on information on how to evaluate feed ingredients, formulate least cost rations, and apply performance parameters to management strategies through attendance of conferences, webinars and face-to-face consultations.

Results

The reproductive goals for heifers enrolled in the Show-Me-Select Replacement Heifer Program are aimed at improving breeding performance during the heifers' first breeding period, minimizing the incidence and severity of dystocia, and successful rebreeding of heifers during the subsequent breeding season. The Show-Me-Select Replacement Heifer Program is the first statewide, on-farm beef heifer development and marketing program in the U.S. Producers are utilizing available technologies for on-farm beef heifer development that are now spilling over into their cowherds. There has been a significant increase in interest and use of estrous synchronization and AI, stemming perhaps from differential in sale prices, but more importantly from successful application. In general, there has been a growing awareness, understanding and appreciation for the importance of reproductive management to the whole herd. For example, when we consider adoption of new technologies, in 2010, 67% of the heifers enrolled in the Show-Me-Select Replacement Heifer Program were artificially inseminated compared with 90% in 2014. Additionally, pregnancy evaluation was determined using ultrasound on 59% of the heifers in 2010, compared with 72% of the heifers in 2014. The program serves as a viable model to implement technology into Missouri's cow-calf operations with the goal of building equity in herds across the state.

Farm management strategies implemented as a result of MO Pork have been evaluated to decrease energy usage by more than 20% resulting in a fuel saving of more than \$0.60 per pig. Swine operations that have adopted this technology have saved over \$180 million for Missouri swine producers. In addition, feed management evaluations conducted on Missouri farms has allowed producers to adopt new feeder designs with alternative feed ingredients resulting in an improvement in feed efficiency with a savings of more than \$2.5 million in feed inputs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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)

Outcome #3

1. Outcome Measures

Annual economic impact to the state's economy from improvements on livestock production.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	2035

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Veterinarians provide expertise in herd health, assessment of reproductive potential, and pregnancy diagnosis. Veterinarians serve as key information sources for U.S. beef producers and are essential in facilitating the adoption of various reproductive procedures. Nearly two-thirds (60.8%) of cow-calf producers cited their veterinarian as a "very important" source of information for their cow-calf operation including health, nutrition, or questions pertaining to production or management.

The combined effects (direct, indirect and induced) of the swine industry in the state are estimated at \$1.1 billion. The bulk of the economic activity is associated with the direct effect of the production itself (\$800 million) which is included in the aggregated category of agriculture. The remainder of the economic impacts attributed to the agriculture sector is indirect and induced effects that include input purchases by swine farmers but also spending of wages and profits on agriculturally related goods. As expected, most of the economic activity is concentrated in the agriculture sector.

The Value Added measure of the impact estimates can be thought of as an estimate of the "new money" brought into the state's economy through the existence of the swine industry. This measure summarizes the profits, rents, interest, dividends, indirect business taxes and most importantly, the wages paid through the economic activity in question. Value Added measures the economic activity generated over and above the cost of the inputs used in an activity. By this measure, it is estimated that the swine industry contributes approximately \$314 million to the state GDP.

What has been done

Implementation of the Show-Me-Select Replacement Heifer Program in Missouri involved University specialists working closely with producers, regional extension specialists, and veterinarians. On-farm development programs that involve local veterinarians, state, regional extension livestock specialists, and individual farm operators provide the structure through which change can occur.

Producer contacts, mailings, surveys and follow up evaluations from demonstrations, conferences, webinars, emails, phone calls and farm visits have allowed direct feedback related to economic impacts of changes made at the farm level.

Results

Veterinarians provide expertise in the areas of health, assessment of reproductive potential, pregnancy diagnosis, and fetal aging. Veterinarians serve as key information sources for U.S. beef producers and are essential in facilitating the adoption of various reproductive procedures.

Nearly two-thirds (60.8%) of cow-calf producers cited their veterinarian as a "very important" source of information for their cow-calf operation including health, nutrition, or questions pertaining to production or management. The success of this program over the past year was largely a function of being able to reach the target audience and the associated impact of that connection. Implementation of the program across the state involved University specialists working closely with producers, regional extension specialists, and veterinarians. On-farm development programs that involve local veterinarians, state and regional extension specialists, and individual farm operators provide the structure through which change can occur.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
303	Genetic Improvement of Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Programmatic Challenges
- Other (Marketing Fluctuations)

Brief Explanation

The audiences targeted in this program include veterinarians, and farmers across Missouri that are actively involved in cow-calf production and marketing. There are no limitations placed on the program in terms of farm or size of cowherd. The pilot programs involved herds as small as 8 cows and as large as 6,000 cows. Technology transfer with respect to the management practices involved is not size dependent but rather producer dependent in terms of introducing a fundamental change in approach to management and marketing that impacts the profitability profile of a particular farm or ranch. The success of this program over the past 18 years relied largely in reaching this target audience and the associated impact of that connection. Numerous sectors of the Missouri livestock industry came together as a result of this program, including University of Missouri Extension, the College of Agriculture, Food and Natural Resources, the College of Veterinary Medicine, the Division of Animal Sciences, the Commercial Agriculture Program, the Missouri Beef Cattle Improvement Association, the Missouri Cattlemen's Association, the Missouri Department of Agriculture, and the Missouri Livestock Marketing Association. Since 1997, when the program was initiated, 805 farms in Missouri have enrolled 116,034 heifers in the Show-Me-Select Replacement Heifer Program. The program has been led by 10 Regional Extension Livestock Specialists that serve as coordinators of the program in their respective regions, and 17 additional specialists across the state that support efforts in these regions. In addition, 257 veterinarians in Missouri have participated in the program since its inception. The Show-Me-Select Replacement Heifer Program draws upon the fundamental

basis which extension and the land grant system was founded: The use and application of what we know to create knowledge. Hence, evaluation has an impact on the program itself. Meaningful assessment of this program began with building in evaluation as part of the design. Data collection was part of the delivery process and reinforced the development of sound management practices through individualized result demonstrations conducted on farms that participated in the program. Farmers used data generated on their own farms with the focus of the program centered on action alternatives based on data generated, methods flowed from issues. The end result was that a negotiated participatory process evolved among the regional extension livestock specialist, the veterinarian, and the farmer with support from state specialists. The existing database from the Show-Me-Select Replacement Heifer Program serves as a conduit in the development of new educational programming areas.

Pork is the most widely consumed meat in the world and the U.S. is the third largest producer after China and the European Union. Historically, Missouri has produced about 5-7% of hogs and pigs in the U.S. In recent decades this percentage has been declining as production in Missouri declined and production expanded dramatically in certain regions of the country, but Missouri's share of hog production seems to have stabilized to around 5%. As production systems evolved, many producers have exited the industry while others have expanded. In the process, the areas of the state with the highest levels of production have changed, but the overall importance of the industry has been maintained. Missouri ranks 7th in the U.S. in the total number of pigs marketed, at nearly 3.1 million pigs from more than 3,000 operations. However, there has been a steady decline in the number of swine operations in Missouri as the number of pigs (inventory) has not followed this trend and has remained steady for 30 years. Missouri swine production accounts for over 5% of the total U.S. production, and over 4% of the U.S. swine operations are located in Missouri. Revenue generated from swine production in 2013 contributed \$791 million to Missouri's economy and created more than 12,600 jobs.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

The Missouri Show-Me-Select Replacement Heifer Program was designed to improve reproductive efficiency of beef herds in Missouri and increase individual farm income. The program objectives include: 1) a total quality management approach for health and management of heifers from weaning to late gestation; 2) increased marketing opportunities for and added value from Missouri raised heifers; and 3) the creation of reliable sources of quality commercial and purebred replacement females. The program was initiated as a pilot project in two regions of Missouri in 1997 with 33 farms and 1,873 heifers. During the past 18 years, 805 farms enrolled 116,034 heifers in the program. The reproductive goals for heifers enrolled in the program are aimed at improving breeding performance during the heifers' first breeding period, minimizing the incidence and severity of dystocia, with the resulting delivery of healthy vigorous calves, and successful rebreeding of heifers during the subsequent breeding season. The marketing component of the program facilitated the sale of 28,785 heifers in 133 sales across Missouri from 1997 through the fall sales in 2014. These sales generated interest from 9,484 prospective buyers that formally registered to buy heifers, and over 3,366 individuals that purchased heifers from the various sales. Heifers from the program have now sold to farms in 19 states, including: AR, AZ, FL, GA, IA, IL, IN, KY, KS, LA, MI, MO, NE, OK, SC, SD, TN and TX. Collectively, 133 sales have generated \$38,528,875 in gross sales. Economic impact in Missouri over the past 18 years resulting from the Show-Me-Select Replacement Heifer Program exceeds \$90 million.

Educational efforts for swine producers feed management and feed manufacturing techniques focuses on farm specific feed budgets, phase feeding programs, and feed intake record keeping. Producers develop an activity based record/accounting program to establish feed production costs. Implementing this program allows swine producers to produce accurate feed intake numbers through the development of an on-farm feed intake assessment technique using a measuring tape with a small washer attached. Incorporating this data into permanent records provides valuable information that can be used to generate diet formulations and feed budgets. Many producers do not keep feed records to determine actual feed efficiency and assume industry averages when an economic analysis is performed. Using actual feed efficiency data can impact profitability and improve the economic analysis of the operation by establishing accurate nutrient requirements of pigs, so ration nutrients are not overfed. These educational efforts have resulted in pork producers having a feed savings of \$2.00 to \$4.00 per ton.

Key Items of Evaluation

Missouri is a leading cow-calf state. The Show-Me-Select Replacement Heifer Program was designed to improve reproductive efficiency of beef herds in Missouri and increase individual farm income. During the past 18 years, 805 farms enrolled 116,034 heifers in the program. The reproductive goals for heifers enrolled in the program are aimed at improving breeding performance during the heifers' first breeding period, minimizing the incidence and severity of dystocia, with the resulting delivery of healthy vigorous calves, and successful rebreeding of heifers during the subsequent breeding season. The marketing component of the program facilitated the sale of 28,785 heifers in 133 sales across MO from 1997, through the fall sales in 2014. These sales generated interest from 9,484 prospective buyers that formally registered to buy heifers, and over 3,366 individuals that purchased heifers from the various sales. Heifers from the program have now sold to farms in 18 states. Collectively, 133 sales have generated \$38,528,875 in gross sales. Producers from 91% of Missouri's 114 counties have participated in the Show-Me-Select Replacement Heifer Program, and buyers from 98% of Missouri's counties have registered to purchase heifers from the program. The program fosters the adoption of reproductive technologies focused on expanded use of artificial insemination (AI), use of high accuracy AI sires, and provides the infrastructure for effective implementation of new reproductive technologies and economic feedback regarding their use. By-products of adoption of reproductive technologies in beef cattle include enhanced genetic merit of heifers and steers, and improvements in whole herd reproductive management.

The Missouri Show-Me-Select Replacement Heifer Program recently created a Tier Two classification system that distinguishes heifers from high accuracy sires. Using data from the past five sales seasons (Fall 2010 through Fall 2014), in which Tier Two heifers sold, we may begin to consider opportunities for producers to add value to their heifers as a result of improvements in genetic merit. For purposes of example, if we use the average sales price of Show-Me-Select qualified heifers carrying a natural-service sired pregnancy as a baseline sale average we can then make the following comparisons to determine the relative added value that resulted from improvements in genetics of the heifer and/or the pregnancy she was carrying: 1) Show-Me-Select heifers carrying natural-service sired pregnancies sold for an average sale price per heifer of \$2,066; whereas Tier Two Show-Me-Select heifers carrying AI-sired pregnancies sold for an average sale price per heifer of \$2,279, adding \$213 per heifer. It is important to note that the baseline average for heifers selling in Show-Me-Select Replacement Heifer sales is approximately \$400 higher than the average reported for bred heifers selling through the Oklahoma City Livestock Market. The Missouri Show-Me-Select Replacement Heifer Program is the first statewide on-farm development and marketing program of its kind in the U.S. Economic impact stemming

from the program on an annual basis is estimated at \$3.5 million to \$7 million. Impact on Missouri's economy from the first 18 years of the Show-Me-Select program now exceeds \$90 million.

Swine nutrition extension programming has provided technical nutritional updates and ration formulation specifications for all phases of the pig's life cycle. These swine nutrition extension programs have worked with independent Missouri pork producers that market over 250,000 pigs combined annually and purchase either raw ingredient for on-farm feed manufacturing or complete feed. These pork producers purchase more than \$2.5 million of feed each year and sales account for more than 80% of the independently produced pigs marketed in Missouri. Cooperative purchase of feed ingredients and other production inputs allows these independent swine producers to effectively compete with larger commercial swine operations. An estimated purchased feed savings of \$100,000 annually (average per independent producer) is realized by using these economies of scale.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Integrated Crop Management Systems - Global Food Security and Hunger

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	15%			
104	Protect Soil from Harmful Effects of Natural Elements	10%			
205	Plant Management Systems	40%			
216	Integrated Pest Management Systems	25%			
405	Drainage and Irrigation Systems and Facilities	5%			
512	Quality Maintenance in Storing and Marketing Non-Food Products	5%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	21.0	0.0	0.0	0.0
Actual Paid	21.0	0.0	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
843171	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
772170	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Campus-based and region-based faculty members will conduct several regional workshops and short courses in partnership with commodity groups and private industry. Venues include commodity district meetings, soil and crop conferences, regional short courses, field days, and on-line and demonstration projects.

2. Brief description of the target audience

The primary target audiences are crop producers and their advisers and private and commercial pesticide applicators. Programs will be developed for crop producers with a diversity of farm sizes, crops produced, and land resource bases. Crop advisers and service providers are important targets because of their extensive contact with crop and livestock producers, which makes them ideal intermediates in passing on University of Missouri Extension programming to a wider range of producers than could be reached by extension personnel alone. Because the future of Missouri agriculture depends on young professionals replacing retiring farmers and personnel, youth organizations such as FFA, 4-H, Young Farmers, and their teachers will receive specially designed programs.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	23000	500000	6500	50000

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

Patent Applications Submitted

Year: 2014

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	8	40	48

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Provide in-service training session(s) for regional Extension specialists on an annual basis.

Year	Actual
2014	3

Output #2

Output Measure

- Develop or revise guide sheets annually for regional Extension specialists to use in producer meetings.

Year	Actual
2014	9

Output #3

Output Measure

- Develop or revise manuals on an annual basis for regional Extension specialists to use in producer meetings.

Year	Actual
2014	4

Output #4

Output Measure

- Print and electronic newsletters devoted to pest and crop management will be developed and distributed to regional specialists and other clientele.

Year	Actual
2014	32

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Producers and crop advisors improve their knowledge related to crop management practices and systems such as new cultivars, pest control, IPM, irrigation and new practices.
2	Two thousand (2,000) private pesticide applicators will meet the legal need of certification by improving their knowledge of pesticides and their use.

Outcome #1

1. Outcome Measures

Producers and crop advisors improve their knowledge related to crop management practices and systems such as new cultivars, pest control, IPM, irrigation and new practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	6845

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Income from crops represents more than 50% of all agricultural receipts in Missouri. As seen by recent food riots in other parts of the globe, net gains in crop productivity in the U.S. are essential for continued economic development. In addition, use of traditional food crops for biofuel production places additional demands on cropping systems. Our goal is to prevent hungry people worldwide by developing and promoting efficient crop management systems in Missouri.

What has been done

Through a series of conferences, workshops, and meetings (more than 100 events statewide) we continue to train producers and advisors on efficient, responsible, and profitable crop production. Specific topics included fertilizer management, energy savings, disease management, herbicide injury, biofuels, resistant pests, pasture allocation, marketing, row-crop management practices, and weather information.

Results

The 200 crop advisers who attended the 2014 Crop Management Conference influence decisions on more than 9.5 million acres and will have an impact on production efficiency, economic development and environmental quality. The 6,000+ producers who attended regional events grow more than 14.9 million acres of corn, soybean, and pasture. Across all programs, attendees trust our educational content more than what they get from any other source. Many positive comments were returned on written evaluation forms pertaining to the use of audience response systems, interactive presentations, and hands-on demonstrations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships

104	Protect Soil from Harmful Effects of Natural Elements
205	Plant Management Systems
405	Drainage and Irrigation Systems and Facilities
512	Quality Maintenance in Storing and Marketing Non-Food Products

Outcome #2

1. Outcome Measures

Two thousand (2,000) private pesticide applicators will meet the legal need of certification by improving their knowledge of pesticides and their use.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	5200

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Pesticide applicator training helps reduce the harmful effects of improper pesticide use. The University of Missouri Extension Pesticide Applicator Training Program provides educational outreach for individuals who wish to become licensed pesticide applicators. Licensed applicators must pass an exam and participate in continuing education courses on environmentally sound uses of pesticides.

What has been done

The University of Missouri Extension Pesticide Applicator Training Program provides educational outreach for individuals who wish to become licensed pesticide applicators. Licensed applicators must pass an exam and participate in continuing education courses on environmentally sound uses of pesticides.

Results

In 2014, the University of Missouri Pesticide Applicator Training Program provided more than 75 initial certification training or recertification training sessions for a total of 1,800 commercial pesticide applicators and approximately 3,450 private pesticide applicators. Commercial applicator training was delivered by a cadre of University of Missouri State Extension specialists with assistance of personnel from the Missouri departments of Agriculture, Conservation, Natural Resources, and Public Health. Private pesticide applicator training was delivered by either formal training sessions presented by 23 University of Missouri regional extension specialists or by applicators viewing a 2 hour and 15 minute training DVD at county extension centers. Clientele

evaluations for the commercial training found 98% of those responding gave the program an excellent or good rating. Many comments were received and found the training program to be more focused, more relevant, or more enjoyable to those who attended in the past. Certified commercial applicators are required to recertify every three years; private applicators every 5 years.

4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest 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

Weather and market prices often limit crop/pasture profitability. MU Extension is a sought-after resource for answers to this, and many other questions.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

MU Extension faculty members conducted more than 528 educational programs this past year in partnership with local, state and federal agencies, commodity groups and private industry. Venues included commodity district meetings, soil and crop conferences, regional short courses, field days, on-line and demonstration projects. Not all of these programs conducted in-depth evaluations but an example of some of the outcomes resulting from these programs showed that a total of 2,176 commercial applicators received training through the University of Missouri Commercial Pesticide Applicator Training Program (CPAT). In order to retain a commercial pesticide applicator license, either recertification training or retesting is required. According to the US Bureau of Labor Statistics, the mean annual salary for pesticide workers is \$32,690. The estimated economic impact of these commercial pesticide applicators receiving recertification training to retain their applicator license and thus their job through the Missouri's CPAT program is valued at \$1,720,960.

Key Items of Evaluation

Based on data from the US Farm & Ranch Survey, when compared to the US population at large, Missourians tend to more frequently contact extension for assistance with irrigation questions. Survey results indicated that in 2003 and 2008, MO irrigators contacted extension regarding irrigation 11.4% and 38.4% more than did the whole of the US population. The popularity of Missourians using their extension services relative to the US average increased 27% (Data from US Farm & Ranch Surveys, 2003 & 2008).

Missouri producers report that their use of the Missouri developed Woodruff Irrigation Chart Maker website has resulted in increased yields by the timely application of water. Those increased yields were reported on .8 million acres for corn, cotton, and soybeans by Missouri producers, on 13 years of MU Extension surveys, which resulted in an additional \$29 million in gross profits for Missouri irrigators. This website has national and international interest, and has been cited in many irrigation papers.

The best way to evaluate how accomplished a regional group is at irrigating is to find farmers that have both irrigated and dryland on similar type of ground, planting date, etc., and then see what the yield difference is (Δ yield). As irrigators gather more skill over time, this differential should increase. If you want to evaluate if the citizens of one region or state are gaining irrigation skills faster than citizens from another state, this can also be done. Take Δ yield at initial time and then what the Δ yield is several years later. The following shows the added Δ yield (bu/acre of soybeans) that occurred between Period 1 (1987-1997) and Period 2 (1998-2011) for the 5 states that have published data. In order of the state with the smallest Δ yield to the state that had the most improvement, they are: TX, 3.2; NE, 3.8; AR, 4.7; KS, 5.0; and, MO, 9.0 bu/acre. MO had increased its irrigated yield over dryland yield more than twice as much as the average of the other four states.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Resource Protection and Management

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%			
111	Conservation and Efficient Use of Water	15%			
112	Watershed Protection and Management	15%			
123	Management and Sustainability of Forest Resources	15%			
125	Agroforestry	5%			
133	Pollution Prevention and Mitigation	15%			
135	Aquatic and Terrestrial Wildlife	15%			
136	Conservation of Biological Diversity	10%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	13.0	0.0	0.0	0.0
Actual Paid	12.0	0.0	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
481812	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
441239	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Campus-based and region-based faculty members, in partnership with commodity groups, conservation partners, general public, and private industry will:

- Conduct workshops and seminars, host field days, assist with planning sessions, establish watershed committees, use mass media (printed, radio, television coverage), to increase awareness and knowledge of Missourians to implement practice and programs that will preserve, protect and sustain the state's natural resource base.
- Conduct water quality education for pesticide use in sensitive watersheds. Watershed education in select eight digit hydrologic units that have been identified with environmental concerns.
- Develop curriculum-based natural resource management programs, including assessment and evaluation tools, marketing strategies and promotional materials.
- Conduct training workshops for local natural resource teams (University of Missouri Extension, Missouri Department of Conservation, and USDA NRCS) and potential local partners (e.g., Missouri Tree Farm, Conservation Federation of Missouri, Quail Unlimited, Wild Turkey Federation, Ducks Unlimited, Isaac Walton League, and Walnut Council).
- Produce up-to-date, science-based information and deliver through guide sheets, newsletters, and websites.

2. Brief description of the target audience

Citizens of Missouri, agency and NGO partners, farmers in sensitive watershed communities, etc.

3. How was eXtension used?

University of Missouri personnel are listed as part of the Community of Service through eXtension. The Bio-energy curriculum, which has an environmental component, is housed with eXtension.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	6840	13680	8500	17000

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

Year: 2014
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	11	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Provide training sessions for Extension specialists and/or state/federal natural resource professionals.

Year	Actual
2014	9

Output #2

Output Measure

- Coordinate delivery of natural resource/watershed management education via 'live' short courses, field days, and workshops.

Year	Actual
2014	47

Output #3

Output Measure

- Assist groups and individuals to develop and implement forest, wildlife, and watershed plans.

2014 University of Missouri Extension Annual Report of Accomplishments and Results

Year	Actual
2014	155

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	70% of water resource seminar participants will indicate increased knowledge and 70% of those attending water resource protection and management courses for professional education credits will change behavior based on knowledge gained. Five watershed groups will receive assistance and change their behaviors towards water resource protection and management.
2	75% of farmers and family forest landowners completing a natural resource management plan will have engaged in at least one natural resource management practice within six months of the plan's completion and 50% of them who implement a management practice will see a positive response within 12 months of completion.
3	50% of farmers and family forest landowners participating in either 'live' or distance-learning education events exhibit a knowledge gain in natural resource ecology and management and 30% will have a natural resource management plan in-place after six months.
4	As part of watershed management planning program, special classes were conducted on pesticide and water quality concerns in vulnerable watersheds. There were 66 meetings held with more than 1,320 participants from 49 counties. Surveys showed that 95% increased knowledge of water quality concerns in their watershed areas. 75% indicated that they will implement management practices to reduced pesticide and nutrient runoff on their property and 88% will implement practices to reduce soil erosion. Those completing the forms controlled between 900,000 and 1 million acres of cropland in Missouri.

Outcome #1

1. Outcome Measures

70% of water resource seminar participants will indicate increased knowledge and 70% of those attending water resource protection and management courses for professional education credits will change behavior based on knowledge gained. Five watershed groups will receive assistance and change their behaviors towards water resource protection and management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Water quality concerns have increased as pesticide and nutrient loading in vulnerable areas has led to a need for more educational activities. Many of the areas identified as vulnerable have public drinking water reservoirs and have agriculture as their main source of local revenue generation. Pesticide use education and watershed planning have become major tools in helping reduce the risk of pesticide runoff and watershed pollution. Environmental and public health can be affected by excessive nutrient and pesticide loading in waterways.

What has been done

Educational meetings on watershed management are offered for private citizens and producers on topics such as pesticide management, nutrient load reduction, and soil erosion control. Group meetings with local producers and one-on-one consultations were used to increase awareness and identify available practices that work effectively in reducing pollutant loading. More than 300 watershed residents have attended conferences on watershed planning this past year.

Results

Increased cover crop and precision agriculture practices have helped control runoff and nutrient loading. A series of pesticide management programs are being offered to increase the awareness of pesticides impact on vulnerable watershed areas. Follow-up survey with those attending these trainings shows a 95% increased knowledge of water quality concerns in their watershed areas. 75% indicate that they will implement management practices to reduced pesticide and nutrient runoff on their property and 88% will implement practices to reduce soil erosion. By understanding proper management to reduce pesticide loss, farmers in critical watersheds have retained the use of atrazine, which keeps pesticide cost to a minimum. Water quality educational program for youth occurred through a series of programs and displays at MU field days where the

program, "What do you do to affect water quality," was offered. More than 9,000 youth attended the series of youth education field days.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation

Outcome #2

1. Outcome Measures

75% of farmers and family forest landowners completing a natural resource management plan will have engaged in at least one natural resource management practice within six months of the plan's completion and 50% of them who implement a management practice will see a positive response within 12 months of completion.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	85

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

To be truly effective, the landowner needs to put into practice the knowledge gained.

What has been done

Six-month follow-up surveys were sent to the 230 farmers and forest landowners who completed a management plan in FY14.

Results

Of the 200 responses received (87% response rate), 148 (64% affect rate) said they implemented at least one new practice on more than 44,850 acres. The top three practices were forest stand improvement (15,000 acres), tree planting (6,100 acres), and invasive species eradication (3,250 acres). Simple cash flow analysis of net present value (NPV) based upon inventory data from the timbered acreage shows that the implementations of research based management practices have a major economic impact. Data shows that liquidated forest today yields a NPV of \$1,000/acre.

Owners that do not manage and liquidate their forest 40 years from now have an NPV of \$100/acre. Owners that manage the forest through forest stand improvement and sustainable harvests yields have a resulting NPV of \$1,150/acre. Therefore, the estimated economic impact resulting from owners implementing the MU Extension forest management program is \$15.75 million (\$1,050/acre) NPV. In contrast, it is estimated that by not implementing the MU Extension forest management program, that increased value would only be \$2.25 million over liquidating the forest asset today!

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
125	Agroforestry
135	Aquatic and Terrestrial Wildlife
136	Conservation of Biological Diversity

Outcome #3

1. Outcome Measures

50% of farmers and family forest landowners participating in either 'live' or distance-learning education events exhibit a knowledge gain in natural resource ecology and management and 30% will have a natural resource management plan in-place after six months.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Farmers and family forest landowners need to know the latest science-based information to assist them in meeting their land management goals and objectives. Missouri citizens at large also need to gain knowledge in natural resource ecology to support the efforts of these farmers and forest landowners.

What has been done

IN FY14, 880 farmers, forest landowners and members of the general public attended either a Missouri Master Wildlifer, Missouri Master Naturalist workshop, quail management field day, or quality deer management workshop.

Results

Of the 880 individuals attending the above educational events, we collected 650 valid pre- and post-event self-evaluations. KA 135 (Aquatic and Terrestrial Wildlife) impact was assessed by observing a 2.1-point knowledge gain in the 650 individuals participating in either a Missouri Master Wildlifer or Missouri Master Naturalist short course. This is a 74% gain in knowledge; 24 percentage points above our target of a 50% knowledge gain.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
125	Agroforestry
135	Aquatic and Terrestrial Wildlife
136	Conservation of Biological Diversity

Outcome #4

1. Outcome Measures

As part of watershed management planning program, special classes were conducted on pesticide and water quality concerns in vulnerable watersheds. There were 66 meetings held with more than 1,320 participants from 49 counties. Surveys showed that 95% increased knowledge of water quality concerns in their watershed areas. 75% indicated that they will implement management practices to reduced pesticide and nutrient runoff on their property and 88% will implement practices to reduce soil erosion. Those completing the forms controlled between 900,000 and 1 million acres of cropland in Missouri.

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

Brief Explanation

This past year produced an excellent growing season with record yields for corn in the state. Where the state corn yield is generally 121 bushels per acre, this year the average was 180 bushels per acre. Conditions in the early spring with heavy rainfalls followed by two or three days of dry weather increased the potential for pesticide, nutrient and soil runoff. Watershed planning in rural areas is built around the agricultural communities and the timeliness of agricultural activities. These extreme weather conditions create a need for

higher management and watershed planning. Many "next" generation farmers are utilizing precision agriculture, cover crops and other programs that help reduce nutrient loading, soil erosion and pesticide use. Many of these younger farmers have financial burdens and focus more on production instead of conservation/environmental concerns.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Evaluations show an increase in awareness and knowledge of many of the issues associated with natural resource planning. Surveys show that 75-80% of all participants have increased awareness and knowledge of environmental issues and 64-75% indicated a change in behavior. The increased use of best management practices for pesticide and nutrient management, timber stand improvement, and wildlife habitat improvement indicates the willingness of producers to make changes once they recognize the economic and environmental benefit of the practices.

Key Items of Evaluation

Protection of environmental and human health through increased implementation of management practices to reduce, control or eliminate pesticide and nutrient runoff, soil erosion, on-site sewage system maintenance and on-farm fuel storage containment. New research indicates the benefits of certain practices, such as cover crop use, that haven't been recognized before.

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Profit Focused Agriculture

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	50%			
602	Business Management, Finance, and Taxation	17%			
603	Market Economics	20%			
604	Marketing and Distribution Practices	4%			
605	Natural Resource and Environmental Economics	4%			
606	International Trade and Development Economics	1%			
607	Consumer Economics	1%			
610	Domestic Policy Analysis	2%			
611	Foreign Policy and Programs	1%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	17.0	0.0	0.0	0.0
Actual Paid	20.0	0.0	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
803020	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
735399	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conduct multisession workshops using curricula or other appropriate material. Participate in or give presentations at meetings, workshops, conferences, seminars. Develop or update curricula or educational materials. Provide individual assistance as follow-up to group activities. Consult with individuals upon request. Develop and distribute information on current issues related to farm/agricultural profitability through newsletters, Internet postings, personal contacts, and media releases. Keep updated and assist farmers with computer and Internet applications. Conduct surveys or develop case studies relevant to improving farm/agricultural profitability. Evaluate the effectiveness of workshops, training, and other activities. Cooperate with agencies and organizations on activities related to the program objectives.

2. Brief description of the target audience

Farmers/ranchers (beginning, primary income, secondary income and transitioning), landowners (absentee, women, seniors), agribusinesses/agencies, agribusinesses/agencies (commercial, farmer cooperatives), and agencies/farm organizations (governmental, commodity groups).

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	16705	50198	3243	3759

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

Patent Applications Submitted

Year: 2014

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Annual training for regional specialists on curriculum-based MO programs and new programs related to Ag Business Management series teaching programs conducted by regional specialists will be monitored and participants invited to complete evaluations.

Year	Actual
2014	17

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Fifty percent of the participants in Annie's Project will develop a strategic plan. A follow-up survey will be conducted after training is complete.
2	Fifty percent of the participants in Golden Age Framing will develop an estate plan. A follow-up survey will be conducted after training is complete.
3	New value-added collective agricultural business organizations will be established annually. A follow-up survey will be conducted after training is complete.

Outcome #1

1. Outcome Measures

Fifty percent of the participants in Annie's Project will develop a strategic plan. A follow-up survey will be conducted after training is complete.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	164

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Missouri Ag Census data reports 12,754 women farm operators-up 17.9%, and 1.95 m ac. owned by women-up 8.4%. Annie's Project curriculum covers risk areas: marketing, production, financial, legal & human resource risk. The class empowers farm women to be better business partners. The 18 hour class is designed for farm women to develop skills and provides tools to make better decisions. The goal is to make farms more profitable, which leads to more economic benefit to the community.

What has been done

Ag business specialists made improvements to Annie's Project curriculum. 7 Annie's Project classes (18 hrs.) and one conference (12 hrs.) were conducted. Participants totaled 164. Extension specialists and professionals taught the classes. Evaluations were reviewed and modified. Classes used evaluations and a 6 month follow-up was sent electronically. Extension specialists met in person to share teaching ideas, curriculum suggestions and creative techniques.

Results

During Annie's Project classes, participants completed balance sheets to enhance the understanding of current and noncurrent assets and liabilities. Each person also learned about business plans and started/completed a plan. Participants were sent an electronic survey 6 months post class. The response rate was 21%. 100% said they had shared class information with at least one other person. 44% of those with leases made modifications. 58% checked bank accounts/vehicles for POD and TOD, and 44% were without a POD/TOD, so added them. A post survey comment, "Annie's Project gave my late husband and I a vehicle to open lines of communication to make farming a true business and not simply to farm the way Grandpa always did." Annie's Project empowers farm women to be better decision makers. The survey indicated 86% made purchasing decisions themselves or helped farm partners, showing application of the

information.

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
606	International Trade and Development Economics
607	Consumer Economics
610	Domestic Policy Analysis
611	Foreign Policy and Programs

Outcome #2

1. Outcome Measures

Fifty percent of the participants in Golden Age Framing will develop an estate plan. A follow-up survey will be conducted after training is complete.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

High land and farm asset values along with more complex family units (divorces, step-children, longer-life) continue to make farm estate and succession planning difficult. The average age of farmers in Missouri is 57, and landowners even higher, so this is a critical, high priority issue for many farm families. However, the complexity has caused many of them to put it off or utilize local professional expertise (attorneys, etc.), who are often not equipped to handle farm estates of over \$1 million.

What has been done

This curriculum has been taught successfully in Missouri for over 5 years. Its goal is to help participants understand terms and issues related to estate and succession planning and to begin the process to complete a plan. In FY14 the course was taught via Interactive Television so it was accessible to more portions of Missouri. The course was taught in 3 nights, 3 hours each, and included an outside speaker (Probate Judge) and work exercise (figuring their potential probate and estate cost).

Results

Participant evaluations have continually demonstrated a large, measureable increase in knowledge in several categories. These include estate planning tools available, the pros and cons of probate, stepped-up basis and its importance, and the difference between gift and estate tax. Actions that class participants have taken are: 85% have calculated an estimate of their estate value; 90% have identified goals and objectives; and 78% have communicated their wishes to their heirs. In addition, in one rural area where the class was held where no estate planning attorney is close, an attorney with local roots was brought into the county. In that instance alone, 60% of the attendees have completed their estate/succession plans since the class in February.

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
606	International Trade and Development Economics
607	Consumer Economics
610	Domestic Policy Analysis
611	Foreign Policy and Programs

Outcome #3

1. Outcome Measures

New value-added collective agricultural business organizations will be established annually. A follow-up survey will be conducted after training is complete.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
-------------	---------------

2014

0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Missouri cattle industry is entering a critical point based on available supply, especially the shortage of cattle that grade Choice, Premium Choice, or Prime. This quality is needed to supply the growing domestic and global demand for high-quality beef. Efforts are being made to value cattle on an individual-carcass basis rather than on an average live-price basis. As a result, value-based grids have supported efforts to improve and reward producers for high quality beef. More than half of all fed cattle are marketed on a grid, rewarding higher quality grade, cut ability, and uniformity.

What has been done

Building off the Show-Me-Select Replacement Heifer Program model, Missouri is building a new value added programming effort called The Missouri Beef Project. This program will build on carefully researched, scientifically proven practices that effectively combine reproductive control of the bovine estrous cycle and careful selection of genetically superior sires that conservatively increase the value of steer calves per beef cow by \$100. Added value will be captured by Missouri's cow-calf producers' adoption of the "Missouri Recipe" for production, management, and marketing of high-quality cattle.

Results

Missouri's beef industry is a leading segment of our state's agricultural economy. Building off the Show-Me-Select Replacement Heifer Program model, Missouri is building a new value-added programming effort entitled The Missouri Beef Project. This new program when fully implemented will increase the value of steer calves per beef cow by \$100, added value that will be captured by responding to increasing world-wide consumer demand for high-quality beef. The Missouri Beef Project has the potential to return up to \$200 million per year to the state, which conservatively can be multiplied as high as five-fold in terms of the total economic benefits to Missouri. In simple terms, deployment of the Missouri Beef Project offers a potential return on investment that far outweighs the Show-Me-Select Replacement Heifer Program and positions beef producers in Missouri to lead the country in the production and sale of high-quality beef.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
603	Market Economics
604	Marketing and Distribution Practices
606	International Trade and Development Economics

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The drought that began in 2012 began to ease in the fall of 2013. Pastures began to improve and cattle producers were able to begin rebuilding their herds in 2014. Grain prices began to fall, which was positive for the livestock industry, but had a negative effect on the value of cropland. A new farm bill was passed in the spring of 2014, but details of the specific programs in the bill were yet to be resolved. The Affordable Care Act was also being implemented and caused some concern among farmers. How to deal with the economic impact of the weather conditions on grain and livestock operations and the potential impact of the new legislation on farm businesses were common topics for meetings and individual assistance during this period. Hog producers were also faced with a new and costly disease of baby pigs. All of the above issues had economic consequences for agricultural producers and increased the need for educational efforts by our AgBusiness specialists.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Many successful educational activities were conducted to help cattle producers recover from economic losses resulting from the drought of 2012-13. These included demonstrations of the software program "Replacement Cow Bid Price Calculator," grazing schools explaining the effect of hay and forage management on the profitability of cattle operations, and marketing strategies for selling and buying cattle. Five dairy profit workshops explained a complete tool kit available for managing risk in dairy operations. Missouri's beef cattle industry improved in FY14, but dairy producers continued to face problems with milk pricing. Grain producers saw yields and profitability return with the end of the drought. Our annual farmland values survey indicated cropland values had been affected by the decrease in profitability in FY14. Our annual series of seminars for agricultural lenders at 14 locations over the state had record attendance. They rated the information gained from these seminars as very valuable, with economic outlook information and example enterprise budgets most valuable. Our annual income tax schools maintained attendance and their high rating of previous years, including approval by the IRS for Continuing Education Credit. Workshops on estate planning and events targeting women in agriculture were also very successful.

Key Items of Evaluation

None

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Managing Forages for Profitable Animal Production - Global Food Security and Hunger

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
205	Plant Management Systems	50%			
307	Animal Management Systems	40%			
402	Engineering Systems and Equipment	10%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	8.0	0.0	0.0	0.0
Actual Paid	14.0	0.0	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
562113	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
514779	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Extension specialists will use multiple delivery methods to reach the target audiences: on-line curriculum, regional grazing schools; core group meetings and "pasture walks"; winter feeding systems and summer pasture programs using demos, clinics, and tours, fescue toxicosis and management workshops; conferences; Ag. Lenders workshops, demonstration plots, grazing symposium field days at outlying research centers; websites, electronic guides; CDs with prepared presentations; in-service training (ISEs); news releases for the general public; and popular press articles.

2. Brief description of the target audience

The primary target audience includes Missouri forage and livestock producers. These are mainly producers of beef and dairy cattle, although the program does address forages for other livestock, such as sheep, goats and horses, and non-livestock forage producers, such as hay producers and wildlife conservationists. The program also targets industry and government, as it presents current science, technology and training to agricultural business and policymakers.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	2700	7200	300	650

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

Patent Applications Submitted

Year: 2014
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	4	8	14

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Provide in-service training session(s) for regional Extension specialists on an annual basis.

Year	Actual
2014	2

Output #2

Output Measure

- Develop or revise guide sheets on an annual basis for regional Extension specialists to use in producer meetings.

Year	Actual
2014	4

Output #3

Output Measure

- Revise Missouri publication M168, Missouri Dairy Grazing Manual.

Year	Actual
2014	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Nine hundred (900) producers will annually attend a management-intensive grazing (MiG) school.
2	Five thousand (5,000) Missouri producers will increase their awareness of stockpiling and summer pasture management for beef cattle.
3	Increase the number of dairy farms that adopt the Missouri Pasture-based model resulting in increased profitability.

Outcome #1

1. Outcome Measures

Nine hundred (900) producers will annually attend a management-intensive grazing (MiG) school.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Management-intensive grazing is based on moving a herd of cattle from paddock to paddock, thereby intensifying the grazing pressure on a small area for a few days before allowing it to rest for several weeks. This practice results in more even distribution of manure, more legume persistence, and less application of commercial fertilizers. The benefit to producers is improved economic and environmental status of a livestock operation.

What has been done

In 2014, the University of Missouri teamed up with the Natural Resource Conservation Service to hold 23 multiday workshops for nearly 600 producers. Also, working with our industry partners, we developed a "tall fescue" alliance to help drive education efforts and increase adoption of the best management practices for dealing with tall fescue toxicosis. In 2014, we held four, day-long workshops on tall fescue toxicosis.

Results

Based on our previous evaluations, approximately 98% of the producers that attended the Grazing School will adopt various practices taught in these workshops, and half of these producers will receive cost-share funds to improve their fencing and watering facilities. The investments in pasture improvements as a result of this program in 2014 alone, and only on Missouri farms, are likely to exceed \$7 million.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Five thousand (5,000) Missouri producers will increase their awareness of stockpiling and summer pasture management for beef cattle.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Winter and midsummer feed accounts for about 70% of the cost of producing beef in the north-central United States. Beef producers have little control over output prices, so efforts to substantially improve profitability depend on finding new and innovative ways to reduce input costs, especially those for winter feed and summer pasture. Although the nature of systems-level research is complex, the program strategically attacks the problem from several angles.

What has been done

The curriculum for our winter feeding was expanded to reflect new research results on stockpiled tall fescue for fall calving cow-calf pairs, to the importance of retaining ownership of calves through the stocker phase and ways to cope with high feed prices. In addition, grazing wedge software was revised and refined to help beef producers plan and manage their pasture systems.

Results

More than 27,000 producers have adopted the techniques developed through this program. From 1998 to 2006, the percentage of producers using stockpiled tall fescue for winter feeding doubled, from 26% to more than 54%. The increased use of stockpiled tall fescue and better summer pasture management saved the state's beef producers nearly \$80 million in 2014. Additionally, the programmatic efforts on retained ownership of fall-born calves through spring are being implemented on several farms in Missouri.

4. Associated Knowledge Areas

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

402 Engineering Systems and Equipment

Outcome #3

1. Outcome Measures

Increase the number of dairy farms that adopt the Missouri Pasture-based model resulting in increased profitability.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is strong interest in alternative systems of dairying that could lower costs of production. Analysis of data from dairy farms has clearly demonstrated that 55% of the variation in profit on a dairy operation relates to the cost of production and management, and the use of pasture systems has been shown to dramatically reduce the cost of production. A critical component of pasture utilization is weekly measurement and evaluation of paddocks if efficiency of the dairy is to improve.

What has been done

Three existing discussion groups met monthly in 2014, to discuss pasture-based dairy systems, forages and grazing management. In addition, a web-based grazing wedge calculator has been improved and made available for any user. An online pasture-based dairy course was refined and offered to both traditional students and beginning producers. The Missouri Dairy Grazing Manual was revised to include the latest research data and economic models.

Results

The monthly discussion groups have increased the knowledge and understanding of efficient use of pastures. When the project was initiated, about 30% of the total dry matter intake in these systems came from pasture, and now certain producers have been able to increase dry matter intake to 74%. The goal is to reach about 50%. Adoption of the grazing wedge has been a major factor in increasing pasture use. This tool, which also generates daily dry matter growth allows producers to make adjustments in sources of dry matter intake and not only increases efficiency, but also affects economic returns by being able to achieve optimum, economical milk production. The dairy grazing conference had 267 attendees. The online course was conducted with about 20 students in spring 2014. Programs focused on KA Codes 205 (Plant Management Systems), 601 (Economics of Agricultural Production and Farm Management), and 307 (Animal Management

Systems).

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

Input costs and prices received for product affect all agricultural enterprises, but environmental conditions can have particularly adverse effects on pasture-based systems. While conditions in 2014 were generally better than in previous years, localized droughts reduced grazing time by almost 40 days, reducing pasture intake by about 1,000 pounds of dry matter. This necessitated the purchase of forages at approximately \$0.05 per pound of dry matter, compared with \$0.025 per pound of dry matter pasture (excluding land costs), costing producers \$35 per cow during this period. Conversely, this reduced profit by this amount, or \$7,000 for the average herd of 200 cows.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Economic conditions in 2014, resulted in more Missouri livestock producers adopting some level of grazing. Producers implementing grazing experienced savings of about \$1.00 per cow per day, with no impact on production. In most cases, production increased slightly. In addition, the University of Missouri pasture-based dairy team used data from the University of Missouri seasonal, pasture-based research dairy to develop forage system models that resulted in more in-take from pastures. Three operations adopted the model and significantly reduced the quantity of purchased feed. Based on discussions at workshops, several other operations will be changing their forage systems to better reflect the environmental conditions experienced in Missouri. This will significantly increase profitability and sustainability of these dairies. Research continues to refine the forage system model that is most efficient in the state.

Key Items of Evaluation

Data has consistently demonstrated that pasture-based dairy systems can produce milk for \$1 to \$2 less per hundred pounds of milk when compared with conventional dairy operations and that they represent a viable system that can have major impacts on the state's economy. The development of the Missouri model for pasture-based systems has been adopted and adapted by several other southeastern states. Educational efforts in Missouri have significantly increased investments in these systems statewide, over \$100

million during the past five years. As experienced here, significant progress can be made in educating potential implementers when land grant universities are willing to invest in this system of dairying. University of Missouri administration has recognized the potential economic development to the state from pasture-based dairying and has been willing to invest in personnel and programming to some extent. But during tight budget conditions, the full potential of such programs may not be achievable. Enhanced collaboration among states in educational programs to demonstrate the economic viability, sustainability and profitability of pasture-based dairying will have a significant impact on state economies.

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Creating Simple Environments for Positive Youth Development

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

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

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	6.0	0.0	0.0	0.0
Actual Paid	22.0	0.0	0.0	0.0
Actual Volunteer	2.0	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
557631	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
597984	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

School enrichment groups meet during school time and use curricula supplied through 4-H. The groups are coordinated by partnerships of 4-H/University of Missouri Extension and school personnel. Most of the groups meet for limited number of classroom hours rather than yearlong. Age guideline: Young

people in grades K-12 or equivalent.

2. Brief description of the target audience

Adults (youth staff, local leaders, parents, volunteers, teachers, organizational leaders) Youth aged 5 - 19.

3. How was eXtension used?

About one-third of campus and field faculty are members of a community of practices pertaining to youth. eXtension allows them to collaborate on science and agricultural science programming for young people.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	2925	196	30827	33571

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

Patent Applications Submitted

Year: 2014
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	5	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Classroom Teachers trained to use 4-H School Enrichment Curricula.

Year	Actual
2014	2925

Output #2

Output Measure

- Number of Youth Enrollment in 4-H School Enrichment.

Year	Actual
2014	30261

Output #3

Output Measure

- Number of youth enrolled in embryology.

Year	Actual
2014	26830

Output #4

Output Measure

- Number of youth enrolled in special interest/short term programs.

Year	Actual
2014	206820

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Youth will increase knowledge and skills gained as reported by their classroom teacher or adult adviser.

Outcome #1

1. Outcome Measures

Youth will increase knowledge and skills gained as reported by their classroom teacher or adult adviser.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth today must be prepared to live and work in a world that we can't completely envision - for jobs that do not yet exist, using technologies that have not yet been invented, solving problems that have not yet been identified. Changes in technology increases the demand for trained scientists and engineers and a broader understanding of technology and science by all citizens. The need for advanced technology abilities cuts across all types of communities, professions and skill levels.

What has been done

Working collaboratively, 4-H field and campus faculty, along with 2,925 teachers, reached 30,261 youth through enriching the classroom environment and 206,820 young people in short-term learning experiences focusing on specific interests in science, healthy living and citizenship. The 4-H Center hosts the Missouri Afterschool Network which partners with the state department of education to reach 3,620 after-school staff and 17,000 young people annually.

Results

The 4-H Center hosts the Missouri AfterSchool Network that works synchronically with the Missouri Department of Secondary and Elementary Education to enhance the after-school experience of 17,000 youth and 3,620 staff members annually. From 2010-2014, the Noyce Family Foundation funded MASN in the amount of \$1.3 million to develop Project LIFTOFF. This STEM initiative focused on building systems to improve and expand STEM education offerings in after school and informal settings across Missouri. Although the funding period has ended, MASN continues to offer STEM professional development, data collection, and leadership opportunities started by Project LIFTOFF in an effort to:

- Increase youth interest in STEM
- Increase the number of college majors in STEM
- Improve the pipeline for careers in STEM

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

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
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

The ability to provide volunteer training and educational experiences for youth is dependent on having well-educated and motivated local and state faculty to guide and support volunteers. In the past year, we have added 20 new 4-H faculty to MU Extension 4-H Youth Development. The impact of their programming will be realized this year and reported next year. Currently there is a St. Louis Metropolitan area that hampers efforts to recruit, support and train volunteers to reach urban youth.

The 4-H Center for Youth Development is working with the Office of Social and Economic Data Analysis to evaluate the impact of the Missouri 4-H Youth Development Programs on alumni that left the program May, 2013 and 2014. Results of the 4-H alumni study will be shared in next year's report.

We are laying the ground work to train faculty on the 4-H Youth Program Quality Assessment used by the University of Minnesota. We have 30 faculty trained in using this observation tool and they are currently evaluating two of their clubs in geographically assigned counties. A post assessment score will be created. Technical assistance will be provided to each club based on the data. A follow-up assessment will be conducted to see if quality of the learning experience improves. Program improvement outcomes for the clubs will be shared in next year's report. In addition, the 4-H Center for Youth Development is transitioning from the 4-H Lifeskills Evaluation System to the National 4-H Common Measures Evaluation System.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Missouri 4-H Members are twice more likely to have been on a college campus than their non-4-H peers. During this program year, MU Extension faculty and staff connected 8,353 youth from 107 of the 114 counties to campus faculty. MU is by far the campus most frequently visited and 4-H is the second most reported reason to be on the MU Campus (Lerner, 2008). Being on a campus is a predictor of youth going on to higher education (Hoover, 2006).

- Missouri young people ages 5-18 participating in 4-H = 1 of every 5
- These students are more likely to go to college and enjoy
 - increased financial success for themselves and their offspring
 - be better consumers
 - improve quality of life through more opportunities for leisure and hobbies
 - improve health for themselves and their children
- If 10% earn bachelor's degrees, their increased annual earnings will total \$56.7 billion (Porter, 2003).

In 2007, the University of Missouri 4-H Center for Youth Development joined the national 4-H Study of Positive Youth Development. Funded by the National 4-H Council and led by researchers at Tufts University, this longitudinal study began with fifth graders in 2001. By the end of the study in 2009, data had been collected by extension faculty from 6,450 adolescents and over 3,000 of their parents in 45 states.

The advantages of 4-H participation include developing positive attitudes about science and more participation in science-focused activities during out-of-school time. The benefit for girls is particularly important. 4-H girls were significantly more positive on all measures related to science. Missouri girls in 4-H also reported increased interest in science-related topics.

4-H'ers believe in engaging in leadership today rather than waiting for future opportunities. 4-H members report twice the number of leadership experiences than their non-4-H peers.

The 4-H Center hosts the Missouri AfterSchool Network that works synchronically with the Missouri Department of Secondary and Elementary Education to enhance the after-school experience of 28,972 youth and 3,620 staff members annually. From 2010-2014, the Noyce Family Foundation funded MASN in the amount of \$1.3 million to develop Project LIFTOFF. This STEM initiative focused on building systems to improve and expand STEM education offerings in after-school and informal settings across Missouri. Although the funding period has ended, MASN continues to offer STEM professional development, data collection, and leadership opportunities started by Project LIFTOFF in an effort to:

- Increase youth interest in STEM,
- Increase the number of college majors in STEM, and
- Improve the pipeline for careers in STEM

Key Items of Evaluation

The 4-H Center for Youth Development is working with the Office of Social and Economic Data Analysis to evaluate the impact of Missouri 4-H Youth Development Programs on alumni that left the program May, 2013 and 2014. Results of the 4-H alumni study will be shared in next year's report.

We are laying the ground work to train faculty on the 4-H Youth Program Quality Assessment used by the University of Minnesota. We have 30 faculty trained in using this observation tool and they are currently evaluating two of their clubs in geographically assigned counties. A post assessment score will be created. Technical assistance will be provided to each club based on the data. A follow-up assessment will be conducted to see if quality of the learning experience improves. Program improvement outcomes for the clubs will be shared in next year's report.

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Creating Collaborative Environments for Positive Youth Development

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

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

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	8.0	0.0	0.0	0.0
Actual Paid	26.0	0.0	0.0	0.0
Actual Volunteer	6.0	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
643420	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
689982	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Developing and delivering youth development curricula to volunteers, staff, community members, parents, etc., to increase their understanding of developmental needs of youth, effective learning strategies and building effective youth/adult partnerships.

2. Brief description of the target audience

Adults (youth staff, local leaders, parents, volunteers, teachers, organizational leaders, non-4-H University of Missouri Extension faculty).

3. How was eXtension used?

Several faculty of the Youth Development Academy are members of eXtension and a couple of them are members of the Community of Practice for Youth and Science.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	7229	5584	23422	3075

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

Patent Applications Submitted

Year: 2014
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	17	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of adults trained by 4-H field and state faculty with youth development academy curricula.

Year **Actual**
 2014 79

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	80% of adults will report increase in knowledge, skills and attitudes to work with youth as a result of attending workshops or conferences where 4-H field or state faculty deliver youth development academy curricula.

Outcome #1

1. Outcome Measures

80% of adults will report increase in knowledge, skills and attitudes to work with youth as a result of attending workshops or conferences where 4-H field or state faculty deliver youth development academy curricula.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	79

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

MU Extension Youth Development Academy provides educational resources and training to prepare individuals to develop skills necessary to successfully work with youth. Professional Development opportunities for individuals working in the youth field are fragmented. The Youth Development Academy provides a comprehensive curriculum for laying a foundation for creating opportunities that promote positive youth development.

What has been done

MU Extension Youth Development Academy combines the teaching component of the 4-H Center with the training, continuing education and course credit needs of Cooperative Extension faculty and staff, other youth development professionals, and college students for work in public, private, or civic sectors. Content is based on the nationally accepted Standards for Professional Development from the USDA and are based upon a wide variety of proven and relevant research-based programs and curriculum.

Results

Of the 79 faculty and staff that completed the youth development academy, 100% report that they have improved their knowledge of how youth grow and develop; skills at providing hands-on learning experiences; and, managing risk in their respective youth organizations and programs.

The Youth Development Academy successfully helps participants gain knowledge in:

- Recognizing and addressing developmental strengths in youth
- Applying non-formal education
- Understanding, respecting and working with all youth
- Evaluating youth programs
- Implementing conflict resolution strategies

Strengthening youth adult partnerships
Planning safe environments and managing risk
Developing community partnerships
Mobilizing volunteers

"In-depth understanding of positive youth development and research supporting best practices."

"My perspective has expanded on every module."

"I feel more confident conversing with other youth development professionals because I now better understand and appreciate the lingo/language and have a better sense of the 'why' behind some of the verbiage and concepts."

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

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
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

The ability to provide volunteer training and educational experiences for youth is dependent on having well-educated and motivated local and state faculty to guide and support volunteers. In the past year, we have added 20 new 4-H faculty to MU Extension 4-H Youth Development. The impact of their programming will be realized this year and reported next year. Currently there is a St. Louis Metropolitan area that hampers efforts to recruit, support and train volunteers to reach urban youth.

The 4-H Center for Youth Development is working with the Office of Social and Economic Data Analysis to evaluate the impact of Missouri 4-H Youth Development Programs on alumni that left the program May, 2013 and 2014. Results of the 4-H alumni study will be shared in next year's report.

We are laying the ground work to train faculty on the 4-H Youth Program Quality Assessment used by the University of Minnesota. We have 30 faculty trained in using this observation tool and they are currently evaluating two of their clubs in geographically assigned counties. A post assessment score will be created. Technical assistance will be provided to each club based on the data. A follow-up assessment will be conducted to see if quality of the learning experience improves. Program In addition, the 4-H Center for Youth Development is transitioning from the 4-H Lifeskills Evaluation System to the National 4-H Common Measures Evaluation System.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Of the 79 faculty and staff that completed the youth development academy, 100% report that they have improved their knowledge of how youth grow and develop; skills at providing hands-on learning experiences; and, managing risk in their respective youth organizations and programs.

The Youth Development Academy successfully helps participants gain knowledge in:

- Recognizing and addressing developmental strengths in youth
- Applying non-formal education
- Understanding, respecting and working with all youth
- Evaluating youth programs
- Implementing conflict resolution strategies
- Strengthening youth adult partnerships
- Planning safe environments and managing risk
- Developing community partnerships
- Mobilizing volunteers

"In-depth understanding of positive youth development and research supporting best practices."

"My perspective has expanded on every module."

"I feel more confident conversing with other youth development professionals because I now better understand and appreciate the lingo/language and have a better sense of the 'why' behind some of the verbiage and concepts."

The 4-H Center hosts the Missouri AfterSchool Network that works synchronically with the Missouri Department of Secondary and Elementary Education to enhance the after-school experience of 17,000 youth and 3,620 staff members annually. From 2010-2014, the Noyce Family Foundation funded MASN in the amount of \$1.3 million to develop Project LIFTOFF. This STEM initiative focused on building systems to improve and expand STEM education offerings in afterschool and informal settings across Missouri. Although the funding period has ended, MASN continues to offer STEM professional development, data collection, and leadership opportunities started by Project LIFTOFF in an effort to:

- Increase youth interest in STEM,
- Increase the number of college majors in STEM, and
- Improve the pipeline for careers in STEM.

Key Items of Evaluation

Of the 79 faculty and staff that completed the youth development academy, 100% report that they have improved their knowledge of how youth grow and develop, skills at providing hands-on learning experiences and managing risk in their respective youth organizations and programs. This is an effective methodology used by the North Central 4-H Program to introduce positive youth development to new faculty. It can be expanded to be offered nationally and internationally. Two workers of 4-H Liberia found it very educational.

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Creating Complex Environments for Positive Youth Development

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

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

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	25.0	0.0	0.0	0.0
Actual Paid	25.0	0.0	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
621973	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
666982	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

4-H Community Clubs.

2. Brief description of the target audience

Adults (youth staff, local leaders, parents, volunteers, teachers, organizational leaders), youth aged 5 - 19.

3. How was eXtension used?

About one-third of campus and field faculty are members of a community of practices pertaining to youth. eXtension allows them to collaborate on science and agricultural science programming for young people.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	22549	45694	36755	59994

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

Patent Applications Submitted

Year: 2014

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	10	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of youth enrolled in 4-H community clubs.

Year	Actual
2014	24592

Output #2

Output Measure

- Number of 4-H volunteers.

Year	Actual
2014	11325

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	A sample of Missouri young people participating in the 4-H Study of positive youth development or those responding to the Missouri 4-H Life Skills survey will report they are competent, capable, caring and contributing.

Outcome #1

1. Outcome Measures

A sample of Missouri young people participating in the 4-H Study of positive youth development or those responding to the Missouri 4-H Life Skills survey will report they are competent, capable, caring and contributing.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	500

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth today must be prepared to live and work in a world that we can't completely envision - for jobs that do not yet exist, using technologies that have not been yet invented, solving problems that have not yet been identified. Changes in technology increases the demand for trained scientists and engineers and a broader understanding of technology and science by all citizens. The need for advanced technology abilities cuts across all types of communities, professions and skill levels.

What has been done

Working collaboratively, 4-H field and campus faculty, with 11,325 volunteers, reached 290,969 youth across Missouri. Food, Health and Fitness, 211,115; Science, 69,782; and, Citizenship/Leadership programming, 25,569.

The Office of Social and Economic Data Analysis is conducting a three-year 4-H Alumni Study to study higher education enrollment and career aspirations.

Results

Missouri 4-H Members are twice more likely to have been on a college campus than their non-4-H peers. Annually, MU Extension faculty and staff connect 8,353 youth to campus faculty. MU is by far the campus most frequently visited and 4-H is the second most reported reason to be on the MU Campus (Lerner, 2008). Being on a campus is a predictor of youth going on to higher education (Hoover, 2006). Missouri data do show an advantage of 4-H participation for developing positive attitudes about science and more active participation in science-focused experiences during out-of-school time. The benefit for girls is particularly important. 4-H girls were significantly more positive on all measures related to science. Missouri girls in 4-H also reported increased interest in science-related topics.

Quotes from focus groups of 4-H members suggest Missouri 4-H members demonstrate higher education aspirations - "if it was not for 4-H, I would not have ever been on a college campus."

4-H'ers believe in engaging in leadership today rather than waiting for future opportunities. 4-H members report twice the number of leadership experiences than their non-4-H peers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

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
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

The ability to provide volunteer training and educational experiences for youth is dependent on having well-educated and motivated local and state faculty to guide and support volunteers. In the past year, we have added 20 new 4-H faculty and 10 staff to MU Extension 4-H Youth Development. The impact of their programming will be reported next year. Currently there is a St. Louis Metropolitan area that hampers efforts to recruit, support and train volunteers to reach urban youth.

The 4-H Center for Youth Development is working with the Office of Social and Economic Data Analysis to evaluate the impact of Missouri 4-H Youth Development Programs on alumni that left the program May, 2013 and 2014. Results of the 4-H alumni study will be shared in next year's report.

We are laying the ground work to train faculty on the 4-H Youth Program Quality Assessment used by the University of Minnesota. We have 30 faculty trained in using this observation tool and they are currently evaluating two of their clubs in geographically assigned counties. A post assessment score will be created. Technical assistance will be provided to each club based on the data. A follow-up assessment will be conducted to see if quality of the learning experience improves. Program improvement outcomes for the clubs will be shared in next year's report.

In addition, the 4-H Center for Youth Development is transitioning from the 4-H Lifeskills Evaluation System to the National 4-H Common Measures Evaluation System.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Missouri 4-H Members are twice more likely to have been on a college campus than their non-4-H peers. During this program year, MU Extension faculty and staff connected 8,353 youth from 107 of the 114 counties to campus faculty. MU is by far the campus most frequently visited and 4-H is the second most reported reason to be on the MU Campus (Lerner, 2008). Being on a campus is a predictor of youth going on to higher education (Hoover, 2006).

In 2007, the University of Missouri 4-H Center for Youth Development joined the national 4-H Study of Positive Youth Development. Funded by the National 4-H Council and led by researchers at Tufts University, this longitudinal study began with fifth graders in 2001. By the end of the study in 2009, data had been collected by extension faculty from 6,450 adolescents and over 3,000 of their parents in 45 states.

The advantages of 4-H participation include developing positive attitudes about science and more participation in science-focused activities during out-of-school time. The benefit for girls is particularly important. 4-H girls were significantly more positive on all measures related to science. Missouri girls in 4-H also reported increased interest in science-related topics.

4-H'ers believe in engaging in leadership today rather than waiting for future opportunities. 4-H members report twice the number of leadership experiences than their non-4-H peers.

The 4-H Center for Youth Development is working with the Office of Social and Economic Data Analysis to evaluate the impact of Missouri 4-H Youth Development Programs on alumni that left the program May, 2013 and 2014. Results of the 4-H alumni study will be shared in next year's report. Preliminary results from focus groups conducted to inform the study are promising. Quotes from collegiate 4-H members - "4-H is always pushing higher education." There was an expectation with comments to questions like, "where are you going to college?" "If it was not for 4-H I would not have been on a college campus. It was an expectation to attend college. I thought that was awesome."

The 4-H Center hosts the Missouri AfterSchool Network that works synchronically with the Missouri Department of Secondary and Elementary Education to enhance the after-school experience of 28,972 youth and 3,620 staff members annually. From 2010-2014, the Noyce Family Foundation funded MASN in the amount of \$1.3 million to develop Project LIFTOFF. This STEM initiative focused on building systems to improve and expand STEM education offerings in after school and informal settings across Missouri. Although the funding period has ended, MASN continues to offer STEM professional development, data collection, and leadership opportunities started by Project LIFTOFF in an effort to:

- Increase youth interest in STEM,
- Increase the number of college majors in STEM, and
- Improve the pipeline for careers in STEM.

Key Items of Evaluation

Missouri 4-H Members are twice more likely to have been on a college campus than their non-4-H peers. During this program year, MU Extension faculty and staff connected 8,353 youth from 107 of the 114 counties to campus faculty. MU is by far the campus most frequently visited and 4-H is the second most reported reason to be on the MU Campus (Lerner, 2008). Being on a campus is a predictor of youth going on to higher education (Hoover, 2006).

The 4-H Center for Youth Development is working with the Office of Social and Economic Data Analysis to evaluate the impact of Missouri 4-H Youth Development

Programs on alumni that left the program May, 2013 and 2014. Results of the 4-H alumni study will be shared in next year's report. Preliminary results from focus groups conducted to inform the study are promising. Quotes from collegiate 4-H members - "4-H is always pushing higher education." There was an expectation with comments to questions like, "where are you going to college?" "If it was not for 4-H I would not have been on a college campus. It was an expectation to attend college. I thought that was awesome."

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Volunteer Development

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

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

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	25.0	0.0	0.0	0.0
Actual Paid	13.0	0.0	0.0	0.0
Actual Volunteer	11213.0	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
321710	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
344991	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

County, regional, state and multi-state volunteer workshops and forums with content including communications, program management, educational design and delivery, Interpersonal Skills, and Youth Development; 4-H Quality matters to study 4-H Clubs; Connecting youth to campus-based educational

events; Web-based instruction; Youth Protection Policies and Procedures (Volunteer Screening).

2. Brief description of the target audience

Adults (youth staff, local leaders, parents, volunteers (including Master Gardeners and Naturalists), teachers, organizational leaders), youth aged 5 - 19.

3. How was eXtension used?

Co-sponsored North Central Volunteer Forum "Achieving Mission" on-line course; will house materials for the course.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	5945	3102	2493	3101

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

Patent Applications Submitted

Year: 2014
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	5	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- County, regional and state volunteer workshops and forums, Leadership roles of 4-H clubs, projects, county and state educational events; Web-based instruction; Youth Protection Policies and Procedures (Volunteer Screening).

Year Actual

2014

0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	5,000 adults and youth volunteers will increase knowledge and awareness of practices fostering positive youth development.
2	5,000 adult and youth volunteers apply practices of positive youth development through leadership roles.
3	Number of volunteers completing Volunteers: The Foundation of Youth Development.
4	Number of volunteers screened prior to service.

Outcome #1

1. Outcome Measures

5,000 adults and youth volunteers will increase knowledge and awareness of practices fostering positive youth development.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	11325

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Volunteers, both adult and youth, are the backbone of Missouri 4-H Youth Development Programs by teaching skills, managing the work of others, mentoring youth, working with teachers and schools, coordinating county and state events and promoting 4-H.

What has been done

Through workshops, volunteer forums, leadership roles and web-based instruction, state and county extension faculty help adults and youth volunteers gain knowledge and skills to design, deliver and develop interpersonal skills that create learning environments that promote positive youth development. Faculty and staff are being trained to use 4-H Quality Matters with 4-H clubs to understand quality youth development programs and co-create an environment fostering positive youth development.

Volunteers, both adult and youth, are the backbone of Missouri 4-H Youth Development Programs by teaching skills, managing the work of others, mentoring youth, working with teachers and schools, coordinating county and state events and promoting 4-H.

Results

Working collaboratively, 4-H field and campus faculty, with 11,325 volunteers, reached 290,969 youth across Missouri: Food, Health and Fitness, 211,115; Science, 69,782; and, Citizenship/Leadership programming, 25,569.

Volunteers serve youth in 1,200 clubs in 107 of 114 counties and St. Louis City. 21% of youth membership is on farms; 41% in towns less than 10,000; 26% in cities and towns 10-50,000, 2% in suburbs and 10% in cities larger than 50,000. Missouri volunteers report they contribute 200 hours per year. Valuing their time at \$21.00 per hour, the contribution of Missouri 4-H volunteers was worth more than \$47.65 million in 2014!

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #2

1. Outcome Measures

5,000 adult and youth volunteers apply practices of positive youth development through leadership roles.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	11325

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Volunteers, both adult and youth, are the backbone of Missouri 4-H Youth Development Programs by teaching skills, managing the work of others, mentoring youth, working with teachers and schools, coordinating county and state events and promoting 4-H.

What has been done

Through workshops, volunteer forums, leadership roles and web-based instruction, state and county extension faculty help adults and youth volunteers gain knowledge and skills to design, deliver and develop interpersonal skills that create learning environments that promote positive youth development. Faculty and staff are being trained to use 4-H Quality Matters with 4-H clubs to understand quality youth development programs and co-create an environment fostering positive youth development.

Results

11,325 volunteers reached 290,969 youth in Missouri 4-H Youth Development programming ? 211,115 in Food, Health and Fitness; 69,782 in SET; 25,569 in Citizenship, Leadership, and Communications. Volunteers serve youth in 1,200 clubs in 107 of 114 counties and St. Louis City. 21% of youth membership is on farms; 41% in towns less than 10,000; 26% in cities and towns 10-50,000, 2% in suburbs and 10% in cities larger than 50,000. Missouri volunteers report they contribute 200 hours per year. Valuing their time at \$21.00 per hour, the contribution of Missouri 4-H volunteers was worth more than \$47.65 million in 2014!

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #3

1. Outcome Measures

Number of volunteers completing Volunteers: The Foundation of Youth Development.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1977

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Volunteers: both adult and youth are the backbone of Missouri 4-H Youth Development Programs by teaching skills, managing the work of others, mentoring youth, working with teachers and schools, coordinating county and state events and promoting 4-H.

What has been done

Volunteer orientation is required for all volunteers to complete in their first six months of service to Missouri 4-H. Orientation can be accessed face-to-face via our field faculty and staff or on-line.

Results

Of the 515 volunteers completing the on-line volunteer orientation between September 1, 2013 and August, 31, 2014:

- * 88% understand that 4-H is protected by U.S. Congress
- * 99% understand the purpose of 4-H
- * 85% understand that all state events provide youth with the opportunity to connect with the latest technology at the land-grant university
- * 61% understand the basic building blocks of positive youth development programming
- * 95% understand the difference between life skills and content skill development
- * 96% understand the importance of reflection in experiential learning
- * 98% understand the importance of using open-ended questions to help kids learn
- * 80 % understand how kids grow and development over time
- * 90% understand the 4-H philosophy of competition
- * 97% understand the concept of mastery

* 99% understand qualities of good character and the correlation to being a good role model for youth

* 99% understand how to keep kids safe while having fun

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #4

1. Outcome Measures

Number of volunteers screened prior to service.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	8153

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Volunteers, both adult and youth are the backbone of Missouri 4-H Youth Development Programs by teaching skills, managing the work of others, mentoring youth, working with teachers and schools, coordinating county and state events and promoting 4-H.

What has been done

For 25-years, Missouri 4-H has screened volunteers annually prior to approving their work with young people. Workshops and webinars for 4-H field faculty and staff are conducted annually to help them understand and meet the standards for a recognized volunteer.

Results

8,153 volunteers were screened prior to working with youth in the Missouri 4-H Youth Development Program. As a result, 260,355 youth had a safe environment to learn, grow and thrive.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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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
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

The ability to provide volunteer training and educational experiences for youth is dependent on having well-educated and motivated local and state faculty to guide and support volunteers. In the past year, we have added 20 new 4-H faculty and 10 staff members to MU Extension 4-H Youth Development. The impact of their programming will be reported next year. Currently there is a St. Louis Metropolitan area that hampers efforts to recruit, support and train volunteers to reach urban youth.

The 4-H Center for Youth Development is working with the Office of Social and Economic Data Analysis to evaluate the impact of the Missouri 4-H Youth Development Programs on alumni that left the program May, 2013 and 2014. Results of the 4-H alumni study will be shared in next year's report.

We are laying the ground work to train faculty on the 4-H Youth Program Quality Assessment used by the University of Minnesota. We have 30 faculty trained in using this observation tool and they are currently evaluating two of their clubs in geographically assigned counties. A post assessment score will be created. Technical assistance will be provided to each club based on the data. A follow-up assessment will be conducted to see if quality of the learning experience improves. Program improvement outcomes for the clubs will be shared in next year's report.

In addition, the 4-H Center for Youth Development is transitioning from the 4-H Lifeskills Evaluation System to the National 4-H Common Measures Evaluation System.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

11,325 volunteers reached 290,969 youth with Missouri 4-H Youth Development programming - 211,115 in Food, Health and Fitness; 69,782 in SET; 25,569 in Citizenship, Leadership, Communications. Volunteers serve youth in 1,200 clubs in 107 of 114 counties and St. Louis City. 21% of youth membership is on farms; 41% in towns less than 10,000; 26% in cities and towns 10-50,000, 2% in suburbs and 10% in cities larger than 50,000. Missouri volunteers report they contribute 200 hours per year. Valuing their time at \$21.00 per hour, the contribution of Missouri 4-H volunteers was worth more than \$47.65 million in 2014!

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- 96% understand the importance of reflection in experiential learning
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- 80 % understand how kids grow and development over time
- 90% understand the 4-H philosophy of competition
- 97% understand the concept of mastery
- 99% understand qualities of good character and the correlation to being a good role model for youth
- 99% understand how to keep kids safe while having fun

With 8,153 volunteers screened prior to working with youth, 290,969 youth were able to learn, grow and thrive in a safe environment. As a result, Missouri 4-H'ers develop positive attitudes about science and participate more in science-focused activities during out-of-school time. The benefit for girls is particularly important. 4-H girls were significantly more positive on all measures related to science. Missouri girls in 4-H also reported increased interest in science-related topics.

4-H'ers believe in engaging in leadership today rather than waiting for future opportunities. 4-H members report twice the number of leadership experiences than their non-4-H peers.

Key Items of Evaluation

11,325 volunteers reached 290,969 youth in Missouri 4-H Youth Development programming - 211,115 in Food, Health and Fitness; 69,782 in SET; 25,569 in Citizenship, Leadership, Communications. Volunteers serve youth in 1,200 clubs in 107 of 114 counties and St. Louis City. 21% of youth membership is on farms; 41% in towns less than 10,000; 26% in cities and towns 10-50,000, 2% in suburbs and 10% in cities larger than 50,000. Missouri volunteers report they contribute 200 hours per year. Valuing their time at \$21.00 per hour, the contribution of Missouri 4-H volunteers was worth more than \$47.65 million in 2014!

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V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

Built Environments and Sustainable Energy

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
605	Natural Resource and Environmental Economics	10%			
608	Community Resource Planning and Development	10%			
723	Hazards to Human Health and Safety	40%			
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	40%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	4.0	0.0	0.0	0.0
Actual Paid	4.0	0.0	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
135365	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
146525	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conduct hands-on workshops for builders and consumers. Assemble and maintain relevant website and guide sheet information. Create a comprehensive Missouri Guide to Green Buildings. Encourage and support involvement in state, county, and local governments and agencies supporting energy-efficient, green buildings and homes. Assemble and maintain relevant website and guide sheet information on indoor air quality, home pollutants, home safety, and disaster preparedness. Maintain curriculum for K-12 schools and at-risk families. Encourage and support involvement in state, county, and local governments and agencies supporting healthy homes and disaster preparedness. Assemble and maintain relevant website and guide sheet information on housing types, maintenance, renting, home financial management and development. Develop curriculum for advocacy groups, housing agencies and nonprofit organizations. Encourage and support involvement in housing coalitions and agencies.

2. Brief description of the target audience

Government Emergency management departments; health agencies; medical groups and agencies; daycare providers; 4-H programs and family and consumer science educators; landlords and tenants; builders and contractors; real estate agents and brokers; K-12 educators, students, school districts; consumers of home appliances; do-it-yourself consumers; business owners; non-profit energy and ecological organizations; energy cooperatives and utilities; first time homebuyers; existing and long-term homeowners; non-profit housing agencies; government and state housing directors.

3. How was eXtension used?

The mission of the Home Energy Community of Practice in eXtension.org is to develop, enhance and maintain a web-based and social media presence on energy and sustainability in housing. This initiative has resulted in a national eXtension website that provides objective research and evidence-based information on residential energy-efficiency and conservation for both consumers and housing professionals. This website comprises of an on-line data base of content that facilitates on-demand learning via consumer-friendly articles and links to additional credible resources, frequently asked questions, an ask an expert feature, webinars, and Moodle courses. State and regional Missouri Housing and Environmental Design specialists provided leadership and primary editorial control on the Alternative Energy subsection of the site, as well as providing authorship, editing, and/or peer-review of over 30% of the hundreds of articles, FAQs, and Ask the Expert pages on the site. In 2014, State Specialist Michael Goldschmidt was one of the recipients of the Housing Education and Research Association's Housing Impact Award for his leadership in the Home Energy CoP.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1782	3217	2116	209

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

Year: 2014
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	4	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of workshops, programs, fairs, and conferences.

Year	Actual
2014	133

Output #2

Output Measure

- Number of unique website visits.

Year	Actual
2014	26246

Output #3

Output Measure

- Number of guide sheets distributed.

Year	Actual
2014	89

Output #4

Output Measure

- Number of in-service opportunities.

Year	Actual
2014	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percent of participants who have a home disaster preparedness plan.
2	Percent of participants who secure funding to purchase a home.
3	Percent of participants who indicate they feel able to maintain their home.
4	Percent of participants who have implemented energy conservation technologies.

Outcome #1

1. Outcome Measures

Percent of participants who have a home disaster preparedness plan.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	31

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Annually, Missourians are severely affected by fire and weather disasters. The possibility also exists that Missourians might be affected by man-made (terror) and/or seismic disasters. Emergency preparedness teaches families how to prepare and cope with these possible disasters; identify hazards likely to happen to your family; mitigate against the hazards; develop a response plan, including evacuation route; plan for coping after a disaster; implement drills and family education.

What has been done

Building Environments programs educate consumers, professionals and government agencies about available and affordable housing options (including programs geared toward first-time homebuyers), housing quality, landlord-tenant relations, long-term home maintenance, healthy indoor air quality, healthy homes, home safety, home disaster preparedness (fire, weather, security) and promoting environmentally-sensitive and energy-efficient homes and buildings in Missouri.

Results

31% of program participants developed a home disaster preparedness plan. These participants understood the importance of being prepared and having a plan in place prior to an emergency situation.

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
608	Community Resource Planning and Development

723	Hazards to Human Health and Safety
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #2

1. Outcome Measures

Percent of participants who secure funding to purchase a home.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	90

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Annually, Missourians are severely affected by fire and weather disasters. The possibility also exists that Missourians might be affected by man-made (terror) and/or seismic disasters. Emergency preparedness teaches families how to prepare and cope with these possible disasters; identify hazards likely to happen to your family; mitigate against the hazards; develop a response plan, including evacuation route; plan for coping after a disaster; implement drills and family education.

What has been done

Building Environments programs educate consumers, professionals and government agencies about available and affordable housing options (including programs geared toward first-time home buyers), housing quality, landlord-tenant relations, long-term home maintenance, healthy indoor air quality, healthy homes, home safety, home disaster preparedness (fire, weather, security) and promoting environmentally-sensitive and energy-efficient homes and buildings in Missouri.

Results

90% of participants in Home-Buyer Education courses secured funding to purchase a home. Most received a reduced interest rate for their mortgage, which will in turn save thousands of dollars over the term of the loan.

4. Associated Knowledge Areas

KA Code Knowledge Area

605	Natural Resource and Environmental Economics
608	Community Resource Planning and Development
723	Hazards to Human Health and Safety
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #3

1. Outcome Measures

Percent of participants who indicate they feel able to maintain their home.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	96

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Annually, Missourians are severely affected by fire and weather disasters. The possibility also exists that Missourians might be affected by man-made (terror) and/or seismic disasters. Emergency preparedness teaches families how to prepare and cope with these possible disasters; identify hazards likely to happen to your family; mitigate against the hazards; develop a response plan, including evacuation route; plan for coping after a disaster; implement drills and family education.

What has been done

Building Environments programs educate consumers, professionals and government agencies about available and affordable housing options (including programs geared toward first-time home buyers), housing quality, landlord-tenant relations, long-term home maintenance, healthy indoor air quality, healthy homes, home safety, home disaster preparedness (fire, weather, security) and promoting environmentally-sensitive and energy-efficient homes and buildings in Missouri.

Results

96% of program participants indicated they feel they are able to maintain their home.

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
608	Community Resource Planning and Development
723	Hazards to Human Health and Safety
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #4

1. Outcome Measures

Percent of participants who have implemented energy conservation technologies.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	241

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Annually, Missourians are severely affected by fire and weather disasters. The possibility also exists that Missourians might be affected by man-made (terror) and/or seismic disasters. Emergency preparedness teaches families how to prepare and cope with these possible disasters; identify hazards likely to happen to your family; mitigate against the hazards; develop a response plan, including evacuation route; plan for coping after a disaster; implement drills and family education.

What has been done

Building Environments programs educate consumers, professionals and government agencies about available and affordable housing options (including programs geared toward first-time home buyers), housing quality, landlord-tenant relations, long-term home maintenance, healthy indoor air quality, healthy homes, home safety, home disaster preparedness (fire, weather, security) and promoting environmentally-sensitive and energy-efficient homes and buildings in Missouri.

Results

241 program participants implemented energy conservation technologies in their homes after attending an extension housing program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
608	Community Resource Planning and Development
723	Hazards to Human Health and Safety
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

None

V(I). Planned Program (Evaluation Studies)

Evaluation Results

None

Key Items of Evaluation

None

V(A). Planned Program (Summary)

Program # 12

1. Name of the Planned Program

Strengthening Families

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
802	Human Development and Family Well-Being	75%			
806	Youth Development	25%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	30.0	0.0	0.0	0.0
Actual Paid	26.0	0.0	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
908879	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
983821	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conduct workshops, multi-session programs and meetings; develop products, curriculum and resources; provide training; work with media; partnering with other agencies and with other state extensions.

2. Brief description of the target audience

Adults, parents, teens, childcare providers, grandparents, foster parents, professionals, teachers, agency educators, youth ages 5-12.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	14098	42340	2264	20097

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

Patent Applications Submitted

Year: 2014

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	3	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of workshops, multi-session programs, fairs, and conferences.

Year	Actual
2014	1161

Output #2

Output Measure

- Number of guide sheets distributed.

Year	Actual
2014	121

Output #3

Output Measure

- Number of in-service opportunities.

Year	Actual
2014	4

Output #4

Output Measure

- Number of website visits.

Year	Actual
2014	123491

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of participants reporting improved family relationships.
2	Percent of participants reporting improved family communication.
3	Percent of participants who show increased knowledge of appropriate parenting practices.
4	Percent of participants who have adopted appropriate parenting practices.
5	Percent reporting an increase in awareness of developmentally appropriate learning environments and activities.
6	Percent reporting they implemented age appropriate learning environments and activities.
7	Percent reporting an increased knowledge of how to manage caregiving roles and responsibilities.
8	Percent reporting an increased knowledge of the availability of family elder care.

Outcome #1

1. Outcome Measures

Number of participants reporting improved family relationships.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	3605

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research shows that strong families communicate with one another, spend time together, show each other caring and appreciation, cope with change, and show each other affection. The Strengthening Families Programs will help families find their strengths and learn new skills to build on these strengths. They will be treated as co-learners who have life experiences to bring to the learning process.

What has been done

The Strengthening Families Planned Program has provided families and professionals with information and skills to strengthen families in their relationships, interactions and communications.

Results

3,605 reported improved familial relationships as a result of participating in a Family Strengthening Program. Most participants were from low SES families who would be considered fragile families.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Percent of participants reporting improved family communication.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	85

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research shows that strong families communicate with one another, spend time together, show each other caring and appreciation, cope with change, and show each other affection. The Strengthening Families Programs will help families find their strengths and learn new skills to build on these strengths. They will be treated as co-learners who have life experiences to bring to the learning process.

What has been done

The Strengthening Families Planned Program has provided families and professionals with information and skills to strengthen families in their relationships, interactions and communications.

Results

85% of Family Strengthening program participants reported improved communication among family members as a result of the skills they acquired.

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Percent of participants who show increased knowledge of appropriate parenting practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	89

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research shows that strong families communicate with one another, spend time together, show each other caring and appreciation, cope with change, and show each other affection. The Strengthening Families Programs will help families find their strengths and learn new skills to build on these strengths. They will be treated as co-learners who have life experiences to bring to the learning process.

What has been done

The Strengthening Families Planned Program has provided families and professionals with information and skills to strengthen families in their relationships, interactions and communications.

Results

89% of program participants demonstrate an increased knowledge about appropriate parenting practices on post-program evaluations.

4. Associated Knowledge Areas

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

Outcome #4

1. Outcome Measures

Percent of participants who have adopted appropriate parenting practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	86

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research shows that strong families communicate with one another, spend time together, show each other caring and appreciation, cope with change, and show each other affection. The Strengthening Families Programs will help families find their strengths and learn new skills to build on these strengths. They will be treated as co-learners who have life experiences to bring to the learning process.

What has been done

The Strengthening Families Planned Program has provided families and professionals with information and skills to strengthen families in their relationships, interactions and communications.

Results

86% of Family Strengthening program participants adopt at least one new positive parenting practice.

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

Percent reporting an increase in awareness of developmentally appropriate learning environments and activities.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Percent reporting they implemented age appropriate learning environments and activities.

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

Percent reporting an increased knowledge of how to manage caregiving roles and responsibilities.

Not Reporting on this Outcome Measure

Outcome #8

1. Outcome Measures

Percent reporting an increased knowledge of the availability of family elder care.

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

Brief Explanation

None

V(I). Planned Program (Evaluation Studies)

Evaluation Results

None

Key Items of Evaluation

None

V(A). Planned Program (Summary)

Program # 13

1. Name of the Planned Program

Personal Financial Management

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
607	Consumer Economics	20%			
801	Individual and Family Resource Management	80%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	6.0	0.0	0.0	0.0
Actual Paid	5.0	0.0	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
193379	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
209324	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

University of Missouri campus and regional specialist will: Work in partnership to identify audience needs; Develop appropriate curriculum and program strategies; and Evaluate the impact of the educational experiences. Delivery strategies will include: workshops; one-on-one coaching sessions; training for professionals and eldercare providers; written materials; educational packets; newsletters; newspaper articles; radio and television spots; and web-based informational tools.

2. Brief description of the target audience

General population, general adult population, low income families, unbanked consumers, consumers going through bankruptcy, youth from pre-school through high school, college students, young couples, divorcing couples, women, older individuals and the elderly (55 and beyond), and family agencies.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	8692	787	787	0

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

Patent Applications Submitted

Year: 2014
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	1	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of workshops, multi-session programs, fairs and conferences.

Year	Actual
2014	557

Output #2

Output Measure

- Number of in-service opportunities.

Year	Actual
2014	3

Output #3

Output Measure

- Number of unique website visits.

Year	Actual
2014	134290

Output #4

Output Measure

- Number of guide sheets distributed.

Year	Actual
2014	142

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of participants who increased knowledge of debt management.
2	Number of participants who increased knowledge of the benefits of saving on a regular basis.
3	Number of participants who increased knowledge of basic personal financial management.
4	Number of participants who have reduced their debt.
5	Number of participants who began saving on a regular basis.
6	Number of participants who increased the amount of money they save regularly.
7	Number of participants who have established financial goals to guide financial decisions.
8	Percent of participants who check their credit report.
9	Percent of participants who understand their rights under the Fair Credit Reporting Act.

Outcome #1

1. Outcome Measures

Number of participants who increased knowledge of debt management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	7734

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

MU Extension provides the general public, special target groups, youth, older citizens and agency personnel with basic, unbiased personal finance information. With research-based curricula, we educate consumers to meet financial education requirements for bankruptcy discharge, financial literacy, home buying strategies, estate planning and retirement asset distribution strategies.

What has been done

Personal Financial Management is delivered through curricula that target low income families, family agencies, the general adult population, college students, women, unbanked consumers, consumers going through bankruptcy, young couples, divorcing couples, youth, from pre-school through high school, and the elderly. This program area will also address consumer issues such as fraud and identity theft, credit reports, predatory lending and basic consumer decision making skills.

Results

7,734 program participants increased their knowledge of debt management.

4. Associated Knowledge Areas

KA Code	Knowledge Area
607	Consumer Economics
801	Individual and Family Resource Management

Outcome #2

1. Outcome Measures

Number of participants who increased knowledge of the benefits of saving on a regular basis.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	7329

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

MU Extension provides the general public, special target groups, youth, older citizens and agency personnel with basic, unbiased personal finance information. With research-based curricula, we educate consumers to meet financial education requirements for bankruptcy discharge, financial literacy, home buying strategies, estate planning and retirement asset distribution strategies.

What has been done

Personal Financial Management is delivered through curricula that target low income families, family agencies, the general adult population, college students, women, unbanked consumers, consumers going through bankruptcy, young couples, divorcing couples, youth, from pre-school through high school, and the elderly. This program area will also address consumer issues such as fraud and identity theft, credit reports, predatory lending and basic consumer decision making skills.

Results

7,329 program participants increased knowledge of the benefits of saving on a regular basis.

4. Associated Knowledge Areas

KA Code	Knowledge Area
607	Consumer Economics
801	Individual and Family Resource Management

Outcome #3

1. Outcome Measures

Number of participants who increased knowledge of basic personal financial management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	7755

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

MU Extension provides the general public, special target groups, youth, older citizens and agency personnel with basic, unbiased personal finance information. With research-based curricula, we educate consumers to meet financial education requirements for bankruptcy discharge, financial literacy, home buying strategies, estate planning and retirement asset distribution strategies.

What has been done

Personal Financial Management is delivered through curricula that target low income families, family agencies, the general adult population, college students, women, unbanked consumers, consumers going through bankruptcy, young couples, divorcing couples, youth, from pre-school through high school, and the elderly. This program area will also address consumer issues such as fraud and identity theft, credit reports, predatory lending and basic consumer decision making skills.

Results

7,755 program participants increased their knowledge of basic personal financial management.

4. Associated Knowledge Areas

KA Code	Knowledge Area
607	Consumer Economics
801	Individual and Family Resource Management

Outcome #4

1. Outcome Measures

Number of participants who have reduced their debt.

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Number of participants who began saving on a regular basis.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Number of participants who increased the amount of money they save regularly.

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

Number of participants who have established financial goals to guide financial decisions.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	3405

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

MU Extension provides the general public, special target groups, youth, older citizens and agency personnel with basic, unbiased personal finance information. With research-based curricula, we educate consumers to meet financial education requirements for bankruptcy discharge, financial literacy, home buying strategies, estate planning and retirement asset distribution strategies.

What has been done

Personal Financial Management is delivered through curricula that target low income families, family agencies, the general adult population, college students, women, unbanked consumers, consumers going through bankruptcy, young couples, divorcing couples, youth, from pre-school through high school, and the elderly. This program area will also address consumer issues such as fraud and identity theft, credit reports, predatory lending and basic consumer decision making skills.

Results

3,405 program participants have established financial goals to guide financial decisions.

4. Associated Knowledge Areas

KA Code	Knowledge Area
607	Consumer Economics
801	Individual and Family Resource Management

Outcome #8

1. Outcome Measures

Percent of participants who check their credit report.

Not Reporting on this Outcome Measure

Outcome #9

1. Outcome Measures

Percent of participants who understand their rights under the Fair Credit Reporting Act.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
-------------	---------------

2014

2901

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

MU Extension provides the general public, special target groups, youth, older citizens and agency personnel with basic, unbiased personal finance information. With research-based curricula, we educate consumers to meet financial education requirements for bankruptcy discharge, financial literacy, home buying strategies, estate planning and retirement asset distribution strategies.

What has been done

Personal Financial Management is delivered through curricula that target low income families, family agencies, the general adult population, college students, women, unbanked consumers, consumers going through bankruptcy, young couples, divorcing couples, youth, from pre-school through high school, and the elderly. This program area will also address consumer issues such as fraud and identity theft, credit reports, predatory lending and basic consumer decision making skills.

Results

2,901 of program participants understand their rights under the Fair Credit Reporting Act.

4. Associated Knowledge Areas

KA Code	Knowledge Area
607	Consumer Economics
801	Individual and Family Resource Management

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
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

None

V(I). Planned Program (Evaluation Studies)

Evaluation Results

None

Key Items of Evaluation

None

V(A). Planned Program (Summary)

Program # 14

1. Name of the Planned Program

Food Safety

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	100%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	6.0	0.0	0.0	0.0
Actual Paid	6.0	0.0	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
212716	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
230256	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Number of Curriculum developed; number of individual inquiries responded to; number of trainings

for large groups; number of smaller workshops; number of guide sheets written; number of newsletter articles written; number of media interviews held.

2. Brief description of the target audience

Pre K - 12th grade students, food stamp individuals and households, general adults, older adults, nursing home assistants, daycare providers.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1748	7296	264	0

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

Patent Applications Submitted

Year: 2014
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of workshops, multi-session programs, fairs and conferences.

Year	Actual
2014	141

Output #2

Output Measure

- Number of in-service opportunities.

Year	Actual
2014	1

Output #3

Output Measure

- Number of website visits.

Year	Actual
2014	89029

Output #4

Output Measure

- Number of guide sheets.

Year	Actual
2014	686

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percent reporting an increased knowledge of proper hand washing.
2	Percent reporting an increased knowledge of cooking foods adequately.
3	Percent reporting an increased knowledge of avoiding cross-contamination.
4	Percent reporting an increased knowledge of keeping food at a safe temperature.
5	Percent reporting an increased knowledge of storing foods properly.
6	Percent reporting an intent to adopt one or more safe food handling practices.

Outcome #1

1. Outcome Measures

Percent reporting an increased knowledge of proper hand washing.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	43

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The need is to protect food from contamination by pathogenic microorganisms, parasites and naturally occurring toxins. A large portion of the population is improperly and unsafely handling food in the home, leading to potentially lethal illnesses. 76 million cases of food borne illnesses occur annually, resulting in 325,000 hospitalizations and 5,000 deaths. Clients include limited resource families, school children, minority families, youth, adults, day care providers, etc.

What has been done

Food safety education through the University of Missouri Extension involves answering consumer questions and teaching safe food handling concepts, both through regional specialists as well as within the Family Nutrition Education Program. Clients include, but are not limited to, limited resource families, school children, minority families, youth, adults, day care providers, etc.

Results

43% of program participants demonstrate an increased knowledge of proper hand washing techniques.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Percent reporting an increased knowledge of cooking foods adequately.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Percent reporting an increased knowledge of avoiding cross-contamination.

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Percent reporting an increased knowledge of keeping food at a safe temperature.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	61

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The need is to protect food from contamination by pathogenic microorganisms, parasites and naturally occurring toxins. A large portion of the population is improperly and unsafely handling food in the home, leading to potentially lethal illnesses. 76 million cases of food borne illnesses occur annually, resulting in 325,000 hospitalizations and 5,000 deaths. Clients include limited resource families, school children, minority families, youth, adults, day care providers, etc.

What has been done

Food safety education through the University of Missouri Extension involves answering consumer questions and teaching safe food handling concepts, both through regional specialists as well as

within the Family Nutrition Education Program. Clients include, but are not limited to, limited resource families, school children, minority families, youth, adults, day care providers, etc.

Results

61% of program participants demonstrated an increased knowledge of keeping foods at a safe temperature.

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

Percent reporting an increased knowledge of storing foods properly.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The need is to protect food from contamination by pathogenic microorganisms, parasites and naturally occurring toxins. A large portion of the population is improperly and unsafely handling food in the home, leading to potentially lethal illnesses. 76 million cases of food borne illnesses occur annually, resulting in 325,000 hospitalizations and 5,000 deaths. Clients include limited resource families, school children, minority families, youth, adults, day care providers, etc.

What has been done

Food safety education through the University of Missouri Extension involves answering consumer questions and teaching safe food handling concepts, both through regional specialists as well as within the Family Nutrition Education Program. Clients include, but are not limited to, limited resource families, school children, minority families, youth, adults, day care providers, etc.

Results

75% of program participants demonstrated an increase in knowledge of proper food storage techniques.

4. Associated Knowledge Areas

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

Outcome #6

1. Outcome Measures

Percent reporting an intent to adopt one or more safe food handling practices.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

None

V(I). Planned Program (Evaluation Studies)

Evaluation Results

None

Key Items of Evaluation

None

V(A). Planned Program (Summary)

Program # 15

1. Name of the Planned Program

Nutrition, Health and Physical Activity

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	25%			
724	Healthy Lifestyle	25%			
806	Youth Development	50%			
Total		100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	15.0	0.0	0.0	0.0
Actual Paid	14.0	0.0	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
483446	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
523309	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Use direct and indirect methods to provide education and targeted messages on nutrition, physical activity, and self-care management. Some specific methods used will include group education, workshops, train-the-trainer strategies, newsletters, web-based education, and media efforts. In addition there will be community level interventions through partnerships that will be developed. This will include working with local coalitions to develop awareness campaigns.

2. Brief description of the target audience

Adults, youth ages 6 through 18, low-income Missourians, pregnant women, adults 55 and older, volunteers, teachers and community members, school teachers and nurses, other adults interested in improving their quality of life.

3. How was eXtension used?

Approximately ten faculty members are involved in eXtension. Most report by answering questions but others have contributed content. When eXtension was first created, MU's frequently asked questions were all uploaded to eXtension's FAQ database.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	65360	678410	777450	63905

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

Patent Applications Submitted

Year: 2014
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	9	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of workshops, conferences, multi-session programs and fairs held.

Year	Actual
2014	46484

Output #2

Output Measure

- Number of in-service opportunities.

Year	Actual
2014	11

Output #3

Output Measure

- Number of partnerships formed.

Year	Actual
2014	23

Output #4

Output Measure

- Number of community campaigns conducted.

Year	Actual
2014	2

Output #5

Output Measure

- Number of website visits.

Year	Actual
2014	872930

Output #6

Output Measure

- Number of volunteers trained.

Year	Actual
2014	38

Output #7

Output Measure

- Number of guide sheets distributed.

2014 University of Missouri Extension Annual Report of Accomplishments and Results

Year	Actual
2014	1814154

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percent of participants reporting improved attitudes about healthy eating and physical activity.
2	Percent of participants who exhibit increased awareness/knowledge of physical activity recommendations for health.
3	Percent of participants who exhibit increased awareness/knowledge of healthy food choices.
4	Percent of participants who exhibit improved skill in selecting healthy foods.
5	Percent of participants reporting increased self-efficacy about managing chronic conditions.
6	Percent of participants who report improved skills in preparation of healthy foods.
7	Percent that adopt one or more healthy food/nutrition practices.
8	Percent that begin or increase physical activity.
9	Percent that tries and accepts new foods.
10	Percent that increase participation in regular physical activity.
11	Percent that improve behavior changes based on MyPyramid and the Dietary Guidelines.

Outcome #1

1. Outcome Measures

Percent of participants reporting improved attitudes about healthy eating and physical activity.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	90

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research indicates increased rates of obesity, type 2 diabetes, decreased physical activity, and low consumption of fruits, vegetables and whole grains among both youth and adults. This is a state and national concern due to the economic burden of obesity and the health consequences of chronic disease such as diabetes. Extension programs must provide adults and youth with the knowledge and skills needed to promote healthful eating and develop a lifelong interest in physical activity.

What has been done

MU Extension provides nutrition, health and physical activity education for adults and youth. These programs provide basic food, nutrition and healthy lifestyle information that promote healthy food choices, physical activity and chronic disease prevention and management.

Results

90% of program participants exhibit increased knowledge and awareness of physical activity recommendations for health at the conclusion of a multi-session program.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Percent of participants who exhibit increased awareness/knowledge of physical activity recommendations for health.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	87

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research indicates increased rates of obesity, type 2 diabetes, decreased physical activity, and low consumption of fruits, vegetables and whole grains among both youth and adults. This is a state and national concern due to the economic burden of obesity and the health consequences of chronic disease such as diabetes. Extension programs must provide adults and youth with the knowledge and skills needed to promote healthful eating and develop a lifelong interest in physical activity.

What has been done

MU Extension provides nutrition, health and physical activity education for adults and youth. These programs provide basic food, nutrition and healthy lifestyle information that promote healthy food choices, physical activity and chronic disease prevention and management.

Results

87% of program participants demonstrate increased knowledge and awareness of healthy food choices.

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Percent of participants who exhibit increased awareness/knowledge of healthy food choices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	77

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research indicates increased rates of obesity, type 2 diabetes, decreased physical activity, and low consumption of fruits, vegetables and whole grains among both youth and adults. This is a state and national concern due to the economic burden of obesity and the health consequences of chronic disease such as diabetes. Extension programs must provide adults and youth with the knowledge and skills needed to promote healthful eating and develop a lifelong interest in physical activity.

What has been done

MU Extension provides nutrition, health and physical activity education for adults and youth. These programs provide basic food, nutrition and healthy lifestyle information that promote healthy food choices, physical activity and chronic disease prevention and management.

Results

77% of program participants demonstrate improved healthy food selection skills on post-program evaluations.

4. Associated Knowledge Areas

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

Outcome #4

1. Outcome Measures

Percent of participants who exhibit improved skill in selecting healthy foods.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	77

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research indicates increased rates of obesity, type 2 diabetes, decreased physical activity, and low consumption of fruits, vegetables and whole grains among both youth and adults. This is a state and national concern due to the economic burden of obesity and the health consequences of chronic disease such as diabetes. Extension programs must provide adults and youth with the knowledge and skills needed to promote healthful eating and develop a lifelong interest in physical activity.

What has been done

MU Extension provides nutrition, health and physical activity education for adults and youth. These programs provide basic food, nutrition and healthy lifestyle information that promote healthy food choices, physical activity and chronic disease prevention and management.

Results

77% of program participants demonstrate improved healthy food selection skills on post-program evaluations.

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

Percent of participants reporting increased self-efficacy about managing chronic conditions.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Percent of participants who report improved skills in preparation of healthy foods.

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

Percent that adopt one or more healthy food/nutrition practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	90

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research indicates increased rates of obesity, type 2 diabetes, decreased physical activity, and low consumption of fruits, vegetables and whole grains among both youth and adults. This is a state and national concern due to the economic burden of obesity and the health consequences of chronic disease such as diabetes. Extension programs must provide adults and youth with the knowledge and skills needed to promote healthful eating and develop a lifelong interest in physical activity.

What has been done

MU Extension provides nutrition, health and physical activity education for adults and youth. These programs provide basic food, nutrition and healthy lifestyle information that promote healthy food choices, physical activity and chronic disease prevention and management.

Results

90% of program participants improve one or more healthy food/nutrition practices as a result of educational programming.

4. Associated Knowledge Areas

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

Outcome #8

1. Outcome Measures

Percent that begin or increase physical activity.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	69

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research indicates increased rates of obesity, type 2 diabetes, decreased physical activity, and low consumption of fruits, vegetables and whole grains among both youth and adults. This is a state and national concern due to the economic burden of obesity and the health consequences of chronic disease such as diabetes. Extension programs must provide adults and youth with the knowledge and skills needed to promote healthful eating and develop a lifelong interest in physical activity.

What has been done

MU Extension provides nutrition, health and physical activity education for adults and youth. These programs provide basic food, nutrition and healthy lifestyle information that promote healthy food choices, physical activity and chronic disease prevention and management.

Results

69% of program participants begin or increase their level of physical activity.

4. Associated Knowledge Areas

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

Outcome #9

1. Outcome Measures

Percent that tries and accepts new foods.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	80

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research indicates increased rates of obesity, type 2 diabetes, decreased physical activity, and low consumption of fruits, vegetables and whole grains among both youth and adults. This is a state and national concern due to the economic burden of obesity and the health consequences of chronic disease such as diabetes. Extension programs must provide adults and youth with the knowledge and skills needed to promote healthful eating and develop a lifelong interest in physical activity.

What has been done

MU Extension provides nutrition, health and physical activity education for adults and youth. These programs provide basic food, nutrition and healthy lifestyle information that promote healthy food choices, physical activity and chronic disease prevention and management.

Results

80% of program participants show an increased willingness to try new foods.

4. Associated Knowledge Areas

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

Outcome #10

1. Outcome Measures

Percent that increase participation in regular physical activity.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	69

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research indicates increased rates of obesity, type 2 diabetes, decreased physical activity, and low consumption of fruits, vegetables and whole grains among both youth and adults. This is a state and national concern due to the economic burden of obesity and the health consequences of chronic disease such as diabetes. Extension programs must provide adults and youth with the knowledge and skills needed to promote healthful eating and develop a lifelong interest in physical activity.

What has been done

MU Extension provides nutrition, health and physical activity education for adults and youth. These programs provide basic food, nutrition and healthy lifestyle information that promote healthy food choices, physical activity and chronic disease prevention and management.

Results

69% of program participants increased their level of physical activity.

4. Associated Knowledge Areas

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

Outcome #11

1. Outcome Measures

Percent that improve behavior changes based on MyPyramid and the Dietary Guidelines.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	90

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research indicates increased rates of obesity, type 2 diabetes, decreased physical activity, and low consumption of fruits, vegetables and whole grains among both youth and adults. This is a state and national concern due to the economic burden of obesity and the health consequences of chronic disease such as diabetes. Extension programs must provide adults and youth with the knowledge and skills needed to promote healthful eating and develop a lifelong interest in physical activity.

What has been done

MU Extension provides nutrition, health and physical activity education for adults and youth. These programs provide basic food, nutrition and healthy lifestyle information that promote healthy food choices, physical activity and chronic disease prevention and management.

Results

90% of program participants make positive food behavior changes based on My Pyramid and the Dietary Guidelines.

4. Associated Knowledge Areas

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

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
- Other (Participant self responsibility)

Brief Explanation

None

V(I). Planned Program (Evaluation Studies)

Evaluation Results

None

Key Items of Evaluation

None

V(A). Planned Program (Summary)

Program # 16

1. Name of the Planned Program

Ensuring Safe Communities

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
805	Community Institutions and Social Services	100%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	4.0	0.0	0.0	0.0
Actual Paid	4.0	0.0	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
137606	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
146421	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Establish and assist COAD (Community Organizations Active in Disasters). Provide disaster educational materials and workshops to communities and organizations. Build partnerships with local,

state, federal agencies and organizations. Consult with local emergency planning committees and/or citizen councils. Represent extension at meetings of federal, state and local emergency management organizations after disasters. Provide training for preparedness. Assist local entities in identification of funding sources for community emergency management and homeland security, e.g., USDA-RD, fire grants, etc. Provide disaster preparedness and mitigation leadership for extension itself. Coordinate and participate in extension disaster activities.

2. Brief description of the target audience

Targeted audience is all social groups in the community, including low-income and minority, Spanish-speaking, community organizations, local government, home builders, agencies that assist in disaster, businesses and farmers. No limitation on gender, ethnic or religious diversity, lifestyle choice, etc.

3. How was eXtension used?

Faculty participated in professional development related to disaster preparedness and recovery offered via eXtension. Faculty regularly drew upon EDEN to answer questions and find resources not available in Missouri as we responded to the complexities of recovery after flooding, drought, and tornadoes. Several examples included determining guidelines for mold cleanup of various types of structures, working with youth after such traumatic events, family financial guidance, etc. Faculty also contributed to the EDEN eXtension learning community and material development.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1492	73764	88	0

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

Patent Applications Submitted

Year: 2014
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of communities assisted with training and facilitation for disaster preparedness.

Year	Actual
2014	51

Output #2

Output Measure

- Number of partner hours leveraged.

Year	Actual
2014	873

Output #3

Output Measure

- Number of Community Emergency Management Web total page views.

Year	Actual
2014	12942

Output #4

Output Measure

- Number of volunteer hours leveraged.

Year	Actual
2014	1472

Output #5

Output Measure

- Number of views for social media sites on community emergency management.

Year	Actual
2014	1808333

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Average change in mean score of workshop participants' (Likert 5 pt scale with 5 highest) self-reported learning from post-pre-post survey.
2	Number of Community Organizations Active in Disaster (COADs) created and/or functioning to meet local needs.
3	Percent of participants in workshops/training having adopted practices such as disaster plans and kits developed.
4	Number of organizations that make changes after conduct of emergency management exercise in the community.
5	Number of county Extension offices that adopted or reviewed disaster plans and preparedness measures during the past year.
6	Dollar value of resources leveraged (volunteer hours, grants for warning systems, etc.) for emergency management.

Outcome #1

1. Outcome Measures

Average change in mean score of workshop participants' (Likert 5 pt scale with 5 highest) self-reported learning from post-pre-post survey.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Missouri experiences significant flooding and severe weather events every year. Preparedness for families, businesses, organizations, farms and communities is critical as is recovery.

What has been done

We conducted workshops on severe weather preparedness, community organizational planning. We distributed information through our offices, county fairs, post-event multi-agency resource centers, TV, web, print services, radio and social media. Extension specialists were primary instructors in Community Emergency Response Teams (CERT) courses and Teen CERT courses.

Results

In a pilot of a Teen CERT course (Community Emergency Management Response team training), youth reported learning the purpose of CERT and how teams are organized; how to use a fire extinguisher and fire "behavior;" how to recognize and safely address basic electrical problems; basic first aid and triage; how to conduct a search and rescue operation (and under what conditions they should do so); how to locate and turn off gas and electric; how to put together a "go bag" and emergency kit; and how to deal with people who are upset and stressed following a disaster. All participants indicated learning: "If I saw a person in need of first aid, I am confident I could help them out until professionals arrive;" "If a person is trapped, I know how to use cribbing to get them out;" "I know at least two safe ways of moving an injured person;" and "I would not enter a building that was knocked off its foundation if I heard cries for help inside."

4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions and Social Services

Outcome #2

1. Outcome Measures

Number of Community Organizations Active in Disaster (COADs) created and/or functioning to meet local needs.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	84

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The laborious process of long-term recovery for farms, businesses and families affected by the large disaster of the previous and current year's positions extension in critically important roles. MU Extension often takes a lead role in forming and supporting COADs and LTRCs. Extension personnel and facilities are often used to facilitate difficult deliberations and support case management for disaster survivors.

What has been done

Extension specialists were called upon regularly to facilitate unmet-needs committees and COADs/LTRCs. In many cases they comprised the day-to-day leadership and often used extension offices and resources. The coordination of many recovery conversations and planning has been facilitated by extension. In addition, we conducted training in formation of COADs and use of a new manual.

Results

Five new functioning COADs were formed this year. The Buchanan County Long Term Recovery Committee tapped the Joplin LTRC to learn from them and create appropriate strategies. As a result, disaster preparedness and response in the county is improving as networks are being developed. The faith-based community is becoming an active part of long-term recovery, and the LTRC formed a COAD. The COAD's application for funds to develop a long-term recovery trailer was fully funded.

As a result of engagement with the Joplin LTRC during the past three years, Extension faculty are submitting articles for the Joplin Area Chamber of Commerce newsletter.

4. Associated Knowledge Areas

KA Code **Knowledge Area**
805 Community Institutions and Social Services

Outcome #3

1. Outcome Measures

Percent of participants in workshops/training having adopted practices such as disaster plans and kits developed.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	57

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Communities, organizations, and businesses must be prepared for the possibility of a multitude of disasters. Key to addressing current and potential disasters is integration of multidisciplinary research and education into a coordinated mitigation, preparedness, response and recovery that includes collaboration with local, state and federal partners. Knowing about preparedness is important but application of learning is critical to true preparedness.

What has been done

Training conducted included workshops on winter preparedness and Community Emergency Response Team for adults and teens.

Results

57% of the teen CERT participants indicated that at the conclusion of the class, "my household is prepared for an emergency and has enough survival supplies for three days." 100% of the students indicated they shared information from CERT with family and/or friends.

80% of the participants in winter weather preparedness training indicated they would make a winter car care kit.

Several participants in the Maysville Emergency Preparedness Fair noted: "This home inventory will be really helpful," (referring to MU publication). "Thank you for having the child fingerprinting available. These prints will go in our safety box." "I loaded the Red Cross phone app on my phone so I can get weather updates."

4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions and Social Services

Outcome #4

1. Outcome Measures

Number of organizations that make changes after conduct of emergency management exercise in the community.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Emergency exercises (disaster simulations) are a critical part of better-prepared city, county, state, and federal government. Communities, businesses, and volunteer organizations that assess their capabilities in disaster prevention, preparedness, response, and recovery activities in a risk-free environment are much more able to respond when the disaster occurs.

What has been done

Several COADs conducted exercises to test written plans and procedures. One conducted a case manager exercise for long-term recovery. And, an exercise for emergency preparedness scenarios was conducted with counties in conjunction with a nuclear power plant.

Results

The City of Maysville developed an emergency management plan as a result of participating in Ready Communities. A cooperative relationship is now developing where it did not exist before. The City emergency management director is now part of the county LEPC and is being invited to their meetings. Through this process, a network of emergency service agencies has been developed which will make emergency response more effective in the event of a future disaster.

As a result of participation in exercises, both the Pulaski and Marion County COADs have begun to address deficiencies in their COADs and emergency preparedness plans. The Buchanan County COAD implemented its learning from Joplin in its structure and operations plan.

4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions and Social Services

Outcome #5

1. Outcome Measures

Number of county Extension offices that adopted or reviewed disaster plans and preparedness measures during the past year.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Missouri has been and will likely continue to experience a number of disasters. Each is costly in dollars, and can cost lives. Disaster preparedness can help mitigate cost and hasten recovery. MU Extension is a key partner with local state and federal agencies. MU Extension employees and county offices must be prepared for potential emergencies or disasters that affect its employees or places of work.

What has been done

We continue to promote and use the county office based disaster plan template and the MU Extension Emergency Management Guidance. Each year during preparedness campaigns: Earthquake Awareness, Severe Weather Awareness and National Preparedness Months, all offices were encouraged to pull out the plan and review it for refreshing faculty and staff on procedures and make possible changes needed.

Results

All 111 offices have the plan in place. With each significant disaster event, county offices, faculty and administrators have followed the guidance appropriately to secure the safety of individuals and their families, and the offices in order to be able to serve the public.

In the Northwest Missouri region, all 21 counties updated their emergency operations plans and all 87 faculty and staff were trained on the plan and emergency procedures in the event of a disaster.

4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions and Social Services

Outcome #6

1. Outcome Measures

Dollar value of resources leveraged (volunteer hours, grants for warning systems, etc.) for emergency management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	239408

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Missouri experienced a number of severe weather events with disaster declaration for some. Recovery from these and long-term recovery issues for communities that experienced tornadoes, massive flooding, and drought issues from previous years requires engaging citizens and organizations in disaster preparedness to mitigate cost, hasten recovery, and secure funding for disaster preparedness and recovery efforts that can save money and lives.

What has been done

We trained CERT teams and assisted COADs and LTRCs as they worked on recovery from disasters such as floods and tornadoes.

Results

The volunteer groups that have come into Atchison and Holt Counties have donated nearly \$232,000 in labor since the 2011 Missouri River flood, including a benefit equivalent of \$88,800 from the retired tree-trimming specialty group who brought their own lifts and other equipment with them. The value received in donated labor is equivalent to hiring three fulltime employees over the last three-year period. As one leader noted, "The difference between what our local merchants have discounted in needed building material to those affected by the flood is absolutely awesome. Merchants with a heart are what we have in this area." For example, these efforts rebuilt a home for one family.

The Buchanan County COAD received \$10,428 in donations that was used to purchase an

emergency response recovery trailer.

4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions and Social Services

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

MU Extension faculty have been fully engaged in local, state and federal recovery efforts since the flooding and tornadoes of 2011, the severe and extensive drought of 2012, that impacted crop and livestock sectors, and the severe winter of 2014. MU Extension played a major role in creating and assisting in long term recovery committees in counties affected by the flooding on the Mississippi and Missouri Rivers and in Joplin, as well as flooding in several areas of the state during the past year (facilitation, community organizing, coordination, extension information, educational programming, and linkages to other agencies and organizations), and with producers severely impacted by the drought. We participated in state level multi-agency meetings (MOVOAD/Partnership) and provided faculty expertise as requested. This engagement continued in FY14, with the addition of five new COADs to address needs of communities impacted by the previous year's events.

MU Extension has always responded to urgent needs of communities and citizens but has created its Community Emergency Management Program to support federal, state and local efforts using only internal financial and human resources. This program is supported by leveraging federal funds and by using very limited internal funds and faculty to support this important program.

While we have an incredible set of teams across the state working on this, we have limitations. Each member of every regional CEMP team has other primary responsibilities to other programs. Hiring freezes, state appropriation cuts during the previous years of 20%, and reduced local funding in some counties - all of which have limited our capacity to deliver local and state programs and develop follow up evaluation. As an organization, we realigned our extension regions during FY13 and also experienced additional retirements without refilling during the year, creating some gaps in our regional community emergency management teams. In addition, considerable time was spent on relationship building with our funding stakeholders. Some of these stakeholders have also been severely affected by state budget cuts. The need to garner grant and contract funding is essential, recognizing that some state monies also funded such contracts.

Therefore, priorities shifted to focus on long-term disaster recovery, with less focus

on programming to conduct exercises and some impact collection. We are also working to bring into alignment our reporting system with the impact indicators and provide sufficient training for faculty and staff in evaluation and reporting. This has been a slow process but we continue to improve.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

The key focus of our evaluation efforts this year revolved around testing the use of the newly developed COAD Guidance Manual. Working with University of Illinois, Purdue University and Lincoln University, we reached 217 individuals in the three states via webinar to provide training on the purpose of a COAD and its importance in preparedness, response and recovery, and how the guidance manual could assist communities. Survey results included: 81% agreed or strongly agreed the webinar met their learning needs, 92% agreed or strongly agreed the webinar contributed to their knowledge and skills. Valuable suggestions for improvement of the manual were generated as well.

During a second phase, extension work with the state emergency management agency delivered an exercise to 11 COADs with the expectation that the COADs would implement recommendations from their exercise to enhance their COAD plan. From this we learned that only one of the 11 had a written formal plan and now recommend that all COADs develop a formal plan complete with resource lists and contact information. We also determined these COADs (except for one) had a strong relationship with their local emergency management agency. Those that operated most efficiently were those tightly aligned and coordinated between the local emergency management agency and the COAD.

We also determined from our work and monitoring that effective and functioning COADs and LTRCs are growing in numbers as a result of our work and the demands created by the disasters. Several have accomplished preventative work that will pay off: installation of emergency warning systems in the community, planning for disasters, conducting of exercises to simulate disaster, etc.

Key Items of Evaluation

Community emergency management has been the epitome of nimble, reliable, responsive and relevant extension engagement in disaster preparedness, mitigation and recovery. Specialists used every bit of previous training and planning over large regions of the state.

Our work contributed to the revival of resilient families, businesses, farms and communities. Communities' disaster recovery periods have been shortened. Lives, jobs and countless dollars in emergency recovery operations have been saved. Whole communities have built a greater sense of cohesion. In follow-up evaluations with severely affected communities, long term recovery committees credited extension for its work in providing educational resources and supporting long term recovery efforts.

Documenting impact of the work with COADs, disaster recovery, and community resiliency is difficult, yet we are seeing these longer-term efforts yielding more prepared communities and their capacities to respond and recover. Without the work of extension, many communities in rural areas would not have systems in place to deal as well as they have with long-term disaster recovery. They are much better at advocating for themselves in the policy arena as well. Important to note is that the COAD Guidance Manual has proven to be a resource that should be of benefit to any state or locality in the US.

Long-term recovery will continue to be our primary focus for communities recovering from disasters, but our CEMP teams will also work with communities in all other phases of emergency management.

Specifically, the Ready Community curriculum (piloted nationally) is more appropriately used with communities that have a paid emergency management staff. Small communities depend on volunteers and this requires more time than most volunteers can devote to one project. The curriculum does not take people through the actual writing of an Emergency Operations Plan, only the collection of information.

V(A). Planned Program (Summary)

Program # 17

1. Name of the Planned Program

Sustainable and Viable Communities

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	45%			
610	Domestic Policy Analysis	5%			
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	29%			
805	Community Institutions and Social Services	11%			
806	Youth Development	10%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	20.0	0.0	0.0	0.0
Actual Paid	15.0	0.0	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
575461	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
612325	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

We will form planning committees/advisory panels, facilitate participatory visioning and planning workshops, moderate local issues forums, train moderators and conveners for forums and issue framing, hold community meetings and conduct presentations, gather data and use decision support tools to analyze alternatives for the community with citizens and decision makers, work with communities to address a specific need or issue. We will train trainers, provide analysis, training and consultation for local and state government, and assist with organizational development, fund development, board training, and tailoring content to local community need. We will provide counseling and expertise, coaching, and we will assist with engaging Spanish-speaking populations and other diverse groups.

In addition to conducting training and workshops, we will conduct intensive courses (such as the Community Development Academy and local leadership development programs) and conferences (such as the partnering on the Cambio de Colores Conference) to share state of the art knowledge and research and to integrate research with community needs. Work with media and facilitate partnerships to assist in working to meet needs of Spanish-speaking and other minority populations.

To facilitate entrepreneurship as an economic development strategy, we will work in selected settings (communities and regions in the state), to develop models of excellent entrepreneurial community practice, community economic development and regional economic development strategies.

We will engage with eXtension, partner with other states for training and delivery, and develop collaborative partnerships with local, state and national organizations for programming and funding (e.g. regional rural development centers, Federal Reserve, state agencies, rural development council, USDA-RD, state economic development organization, etc.). In addition, we will engage campus-based faculty (extension and other) with regional extension faculty to work collaboratively and across disciplines to develop and deliver programs that are based on research and best practices while engaging with the community for its development and to inform research and teaching on campus. To the extent possible, we will provide internships for graduate students and class projects that are based in the community, and engage graduate students in evaluation while providing opportunities for research.

2. Brief description of the target audience

Targeted audiences will be all social groups in the community, including low-income, minority, youth, adults, community leaders, local government and policy making groups, and state and local agencies. There will be no limitation on gender, ethnic or religious diversity, lifestyle choice, etc. Also targeted among adults will be those who are currently serving in a leadership role in an agency, organization, neighborhood, club, community, business or aspire to serve; local and state government officials; and professionals working in community development.

On the collective scale, we will work with organizations, neighborhoods, communities, counties

2014 21

Output #2

Output Measure

- Number of other conferences, courses, and workshops held.

Year	Actual
2014	79

Output #3

Output Measure

- Number of communities/regions engaged.

Year	Actual
2014	32

Output #4

Output Measure

- Number of organizations we assisted.

Year	Actual
2014	104

Output #5

Output Measure

- Percent of participants in workshops and training indicating they would recommend the program to others.

Year	Actual
2014	97

Output #6

Output Measure

- Mean ranking (Likert scale of 1 to 5, with 5 being highest) of overall value of program by participants in workshops and training.

Year	Actual
2014	4

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Mean response of participants in planning processes (On Likert 5 pt scale with 5 highest) reporting they feel they have an increased voice and opportunity to participate in the community.
2	Average change in mean score of participants' (Likert 5 pt scale with 5 highest) self-reported learning from post-pre-post survey.
3	Number of participants reporting taking on increased, different, or new leadership roles in community.
4	Number of communities/organizations developing or updating a plan.
5	Number of communities/organizations reporting engagement in plan/project implementation.
6	Million dollar value of resources generated/leveraged/or saved by communities and organizations.
7	Number of businesses and new organizations started.

Outcome #1

1. Outcome Measures

Mean response of participants in planning processes (On Likert 5 pt scale with 5 highest) reporting they feel they have an increased voice and opportunity to participate in the community.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Local officials want to serve citizens, and local citizens want to contribute to and improve their community. Participation is the foundation of democracy. Citizens who are encouraged to participate are more likely to contribute to the community both in actions and contributions. Communities need methods to dialogue on contentious issues without generating deep conflicts.

What has been done

Training, decision-making and planning programs use facilitation methods that allow people to have a voice and encourage diversity of participation that reflects the make-up of community. This was central to leadership development, economic development, planning, and the Community Development Academy offerings.

Results

Project Community Connect in Warrensburg has resulted in meeting the needs of the homeless and promoting a culture of service. Many volunteers have never helped with something like this before; many have been very moved to start projects of their own. One woman has started a collection at church that lasts all year. In addition, recipients are reporting the difference it has made to get a haircut, a tooth pulled, even as dramatic as now being able to obtain and hold a job. Other reports indicate an increased sense of community and realization that this annual community event is not just an event that benefits the homeless but the entire community.

According to volunteer registration, the event drew in 636 community volunteers who contributed a total of 3,600 volunteer hours during the one-day event.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #2

1. Outcome Measures

Average change in mean score of participants' (Likert 5 pt scale with 5 highest) self-reported learning from post-pre-post survey.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many community leaders, local elected officials and volunteers lack an understanding of the factors that influence the community, the local economy, development strategies and a basic understanding of collaboration and impacting the collective future of the community.

What has been done

We offered an array of workshops, training and courses in planning, economic analysis and development, tourism, decision-making and policy, organizational and leadership development, and local government finance. Several foci also included a regional approach, urban neighborhoods, community health, and community food systems, and community arts as well as offering the Community Development Academy.

Results

Participants in the What's Brewing Series with St. Louis neighborhood and agency leaders learned "a great deal about how the school district was improved," and, "a great deal from the city manager and business leaders about community growth." Participants in the Columbia Tenants Association training learned: "how to work with others and deal with conflict," and "how to organize a group around an issue important to our housing association." One noted, "I am going to speak up in meetings more with more confidence." A Shelby County Youth EXCEL participant indicated, "I'm going to be a better president of my class now. I'm not going to be bossy. I know that to be respected by my classmates, I have to respect them." A second noted, "I want to be on the Extension Council and learn more." Another stated, "I read Covey's book this month and I'm going to practice the 7 habits. It will make me a stronger person."

4. Associated Knowledge Areas

KA Code	Knowledge Area
---------	----------------

608	Community Resource Planning and Development
610	Domestic Policy Analysis
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions and Social Services
806	Youth Development

Outcome #3

1. Outcome Measures

Number of participants reporting taking on increased, different, or new leadership roles in community.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	232

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In order to build sustainable communities, research shows participants need to learn about their communities and build leadership skills. Effective communities provide community leadership programs to build a critical mass of citizens educated about their community to fill leadership roles as they become open over time. Community leadership development is a means of succession planning.

What has been done

Cohort programs with multiple sessions have been designed based on research showing that in-depth programs increase skill and knowledge acquisition and graduate commitment to leadership roles. Evaluation data has been used for improvement. Programs provide activities for alumni engagement, opportunities to gain additional skills and knowledge. Programs targeted rural and urban neighborhoods, youth and adults, and low-income community leadership engagement.

Results

As a result of work with the Savannah city council, which was having difficulty conducting effective meetings and experiencing high turnover of elected and appointed offices, the council is now working well together, and a turnaround is occurring. The members are equally engaged, the conversation style has changed (noted by a reporter), parliamentary procedure is being used, and the council is taking a citizen request for a state audit (based on Sunshine Law) as a learning

opportunity. The community is now planning to work with extension on a community tourism asset inventory.

A Leadership Phelps County participant reported being able to apply for a supervisory position and having the confidence to excel at it.

A St. Louis Neighborhood Leadership Academy participant used the "draw your ideal community" exercise as a community engagement/visioning exercise at his neighborhood park event and fundraiser.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions and Social Services
806	Youth Development

Outcome #4

1. Outcome Measures

Number of communities/organizations developing or updating a plan.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	44

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Local governments and community organizations must be able to effectively collaborate and engage constituents in planning for the future in order to leverage resources and initiate projects and serve constituents. Citizens want input into the community or organization. Funding organizations require a proposal to show relation to a plan. For implementation a plan shows the needed sequence for a successful outcome.

What has been done

We provided training through the Community Development Academy; facilitation, using methods that allow people to have voice; and, technical assistance to help build capacity of residents and organizations to engage in planning for community action. We conducted an in-depth series of workshops in community economic development, community tourism, community arts, and several courses in basic economic development fundamentals.

Results

The City of Reeds Spring submitted a \$1 million grant as part of an overall cooperative effort to renovate the Old Reeds Spring High School (a building built by the WPA), to create a community wellness center with a gymnasium, stage, exercise classrooms, meeting room, history display/library, and early childhood programming. The City passed a participation ordinance with the Missouri Clean Energy District to enable funding for energy efficiency and renewable energy renovation for the existing building.

The Henry County Economic Development Council undertook a strategic planning effort with nearly 60 county residents participating. The outcome was a focus on three key areas: tourism, improved communication between the cities, between the cities and the county, and funding/growing county-wide economic development efforts.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
805	Community Institutions and Social Services
806	Youth Development

Outcome #5

1. Outcome Measures

Number of communities/organizations reporting engagement in plan/project implementation.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	39

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Local officials and organizations wish to implement what residents and members want. Organizations want to improve services to clientele. Citizens want input into the community or an organization of which they are a member or clientele. Plans are important as guides for future activity. They serve very little purpose if they are merely written and do not serve as a guide for future community action.

What has been done

Implementation is a long-term commitment and extension works with communities every step of the way. We provided facilitation, technical assistance, resource information, and training for communities as they implemented plans on a wide range of projects from community gardens to offender re-entry; from economic development to tourism; from preserving historic schools and other buildings to responding to business closures or relocations; from summer youth programs to food access.

Results

After collaborative planning, Spencer Lake and the surrounding park and ball fields underwent major improvements. Total costs for the project were \$63,000 with one third coming from a water quality improvement grant developed with extension assistance. The leveraging of funds and teamwork made this project a success with improved usability of the ball fields, swimming beach, fishing area, and community gathering site for the residents of Schuyler County and visitors to the area.

Three groups are working to save one-room schools in southwest Missouri to be used as rural community centers when completed. Oral histories are being collected, and community volunteers are working together in a positive way.

The Johnson County Cares Board successfully implemented plans to increase the capacity to provide feeding for the homeless.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
805	Community Institutions and Social Services
806	Youth Development

Outcome #6

1. Outcome Measures

Million dollar value of resources generated/leveraged/or saved by communities and organizations.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Failure of traditional economic development strategies forces communities to seek new ways to spur economic activity. To build sustainable communities, education and facilitation for capacity building has to assist communities and organizations in creating resources through increased volunteerism, nonprofit, private and publicly leveraged investment, and generated efficiencies to create sustained economic value and development.

What has been done

We provided workshops, facilitated implementation of plans, and provided technical assistance for fundraising and grant writing, volunteer and fiscal management to communities and regions, nonprofit organizations and local governments. Leadership programs included economic components. In-depth and sustained work continued with specific communities and regions.

Results

Work over the last three years with the MINK (MO-IA-NE-KS) Region along the Missouri River between Omaha, NE and Kansas City, MO resulted in the region being nominated by the 4-state USDA-RD directors for recognition as a Great Region. It was announced that MINK will be awarded the designation by Secretary of Agriculture, Tom Vilsack, in a ceremony in Washington, DC. State-line boundaries are giving way to the regional economic development concept whether the activity happens to be a local activity or an economic development specific to a certain location. Significant progress is being made in the regionalism development phase.

Osage County Agritourism Council reported that during an August church tour to promote cultural heritage tourism, participants spent over \$1,500 at churches and a local nursery.

The Cass County Oral Health Coalition submitted three grants for funding totaling \$565,000 to support clinic operations and received \$400,000 which allowed the addition of a second dentist.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

805 Community Institutions and Social Services
806 Youth Development

Outcome #7

1. Outcome Measures

Number of businesses and new organizations started.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	48

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Communities are concerned about how unemployment affects local economic wellbeing. While the general economic climate has the largest impact on jobs, communities can look for niches that can create local jobs and economic activity. As the economy expands, nonprofit organizations and businesses might continue to grow. Job creation does not happen rapidly and quality planning and decision-making can facilitate economic vitality and growth.

What has been done

We worked with a variety of communities, organizations and agencies to create decisions that could lead to business/organization creation and build capacity for community and economic growth. Community planning and analysis are an important part of creating capacity for communities for job and business creation and support. We provided training, facilitation, analysis, mapping and other tools in support of communities, regions and urban neighborhoods.

Results

After Pilot Grove (pop. 723) lost its sole grocery store in 2009, the closest full-service grocery store was 15 miles away. The Pilot Grove Community Betterment group decided to explore the possibility of opening a new grocery store with 120 community members to determine what they needed to do to bring a grocery store back to town and develop a plan to do so. A survey revealed that 73% of respondents were willing to support the project financially to some degree. After exploring various building options and business organization options, a group of 23 investors put up \$320,000 and formed a limited liability corporation to build the store. A couple who operates stores within a 60 mile radius opened the new store in November 2013, which now employs an additional four residents and serves as a new social hub in the community.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
806	Youth Development

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
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

Two of the most significant factors affecting outcomes include limitations of faculty time and pressures with decreased federal, state and local funding. After four years of a university hiring freeze with increased faculty vacancies, we have begun hiring, and as many as half of the faculty working in this program area have not been in the position yet a year. Starting programs and collecting longer term impacts take a few years.

Limitations are also imposed by the economic downturn for program sponsors. Internal to the university, some resources have been redirected. And local and state governments are still constrained by the economic downturn as the Midwest is often slower to recover and rural communities even more so.

In addition, the changing interests and demands of participants and leaders can affect programming and follow-up.

Finally, tracking communities for outcomes over longer periods of time is both difficult and expensive and the causation effect becomes problematic due to other factors that influence action in the community arena.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Post session or post program evaluations show that programs are well received and valued by communities, leaders, citizens and partners. Research shows Community Leadership Development programs are yielding engaged, new, and diverse rural and urban leaders. For example, Treina McCoo, class of 2012, founded a daycare program in the City of Wellston for her Neighborhood Leadership Academy project. She reported in 2014, that due to what she learned in NLA, she now has 4 employees and 24 kids enrolled in her program. She also received \$30,000 in grants to expand the program. This is the first daycare in Wellston.

The most recent Community Development Academy follow-up survey (71 responses,

52% response rate) showed: Mobilization of 2,649 volunteers who provided 21,370 hours of service to their communities, 42 updated community or organizational plans, 25 new community development projects, and leveraging an estimated \$1,928,431.

Over the past eight years, the Extension Community Economic and Entrepreneurial Development program leveraged millions in economic value for the communities and regions involved. In addition to job retention and development, new leaders and new networks have emerged to support viable economic development. Participants in the Stronger Economies Together program and similar spin-off programs have developed plans that have translated into stronger collaboration and development of new opportunities in these regions and other areas.

Other long-term results are most often reported from in-depth engagement with communities and nonprofit organizations for planning that involves purposefully including the diverse community voices. The continued attribution and acknowledgment of extension's role in facilitating the creation of plans for communities as they implement and complete plans and then revise plans is indicative of the role we can play in revitalizing both urban and rural communities. While examples abound, our engagement with Lexington around community arts through early 2014, led to residents contributing well over 1,167 volunteer hours valued at \$22,173, launching a gifts and endowment fund to expand and sustain community arts programming that secured \$1,850 in its first six months, garnering gifts to fund the printing cost of over 7,000 printed tour maps and 1,000 audio tour CDs being developed as part of the partnership with university arts departments and extension, and leveraging \$1,400 in-kind contributions. The city has experienced an enhanced overall image, launched two new art businesses, held seven art shows and is developing an art gallery in partnership with regional artists and a 9-county tourism alliance. Lexington is becoming a stronger, vibrant community where people want to live.

Tracking results during the Warsaw Heritage Days showed it brings in 250 craft and food vendors, entertainers, heritage style demonstrators and reenactments and 2,500 attendees that increased the city and county sales revenues and generated over \$22,000 for the Chamber of Commerce.

Key Items of Evaluation

Data collection is consistent with the key outcome indicators developed in the North Central region for CRED programs. Most workshops use a similar survey at the end of the session to assess learning. Protocols have been developed for collection of impact data regarding application of knowledge and changes effected for communities and organizations, such as implementation and results, leverage of resources, etc. The numbers reported rely on participant and key informant attribution. In addition, participants in community leadership programs receive follow-up surveys after 6-12 months to determine learning and additional application, using a normed survey developed in concert with several other North Central states.

For the Community Development Academy, participants provide in-depth information about their learning on the key topics through daily written feedback and a focus group at the end of each course. An online survey is conducted approximately every three years to determine mid-term and longer impacts. The Community Development Academy is a proven model that increases capacity to address complex community issues and work in diverse environments. Participants come from around the US and the world and are applying what they have learned to all five program areas in NIFA.

Our evaluation study of ExCEED (community economic development) and Stronger Economies Together shows that formation of the human capital and the social capital is what underpins the empirical data collected about impact in terms of jobs created,

businesses started, and resources leveraged and generated.

Community and organizational outcomes generally are accrued in the long term. For example, in a follow-up survey of graduates of Dent County Youth Leadership Academy, after 5-years, 88% said they had been a positive role model for others, 100% had been of service to others in their community, and respondents (24% response rate) estimated they had spent more than 167 hours volunteering since participating in YLA, in activities such as student council, church activities, Community Betterment, and Salvation Army bell ringing, among others. 37% have taken on an active role in planning or conducting a community project as a result of participating in YLA.

Also, a planning process is by definition about the future. Over time other factors can intervene which can stop a community or cause it to change its plans. Often it takes a community some time to re-group.

Measuring long-term impact is not a precise science. Little research has been done that can be applied and transferred. Case studies and the ability to tell the story over time are important, as the results are contextual. Rarely are we able to prove causation. Communities and participants report that money was saved, but do not report an amount. In addition to the fact that our numbers are those attributed by leaders and participants (and at that, we don't always sufficiently ask about ongoing impact), the impact in terms of social and civic value as well as economic value is likely much higher.

V(A). Planned Program (Summary)

Program # 18

1. Name of the Planned Program

Business Development

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
602	Business Management, Finance, and Taxation	100%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	10.0	0.0	0.0	0.0
Actual Paid	7.0	0.0	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
249083	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
226852	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Business counseling and training.

2. Brief description of the target audience

Small business owners, managers and their employees. Individuals who want to start a business. Partners, stakeholders and funding agencies, including elected officials.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	4	210	0	0

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

Patent Applications Submitted

Year: 2014
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of counseling clients.

Year	Actual
2014	4170

Output #2

Output Measure

- Training customer satisfaction (scale 1-7 high).

Year	Actual
2014	6

Output #3

Output Measure

- Number of applied research projects.

Year	Actual
2014	0

Output #4

Output Measure

- Website statistics (in millions).

Year	Actual
2014	1

Output #5

Output Measure

- Counseling hours.

Year	Actual
2014	23631

Output #6

Output Measure

- Counseling customer satisfaction (scale 1-7 high).

Year	Actual
2014	6

Output #7

Output Measure

- Training attendees.

Year	Actual
2014	16840

Output #8

Output Measure

- Training events.

Year	Actual
2014	815

Output #9

Output Measure

- Training hours x attendees.

Year	Actual
2014	47320400

Output #10

Output Measure

- Number of counseling sessions.

Year	Actual
2014	14522

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increase in knowledge.
2	Business owners will start or expand a business as appropriate to their business goals.
3	Business owners will make or revise decisions about the type of business or business structure as appropriate to their business goals.
4	Business owners will prepare a business plan as appropriate to their business goals.
5	Business owners will develop financial projections as appropriate to their business goals.
6	Business owners will seek start-up funding as appropriate to their business goals.
7	Business owners will develop management systems as appropriate to their business goals.
8	Business owners will investigate legal and compliance issues for their business as appropriate to their business goals.
9	Business owners will develop a marketing plan as appropriate to their business goals.
10	Business owners will commercialize products as appropriate to their business goals.
11	Business owners will inform stakeholders of the outcome of their work with the University of Missouri Extension Business Development as appropriate to their business goals.
12	Number of jobs created.
13	Dollar amount of sales and contracts (in millions).
14	Dollar amount of business investments, including loans and equity approved loans (in millions).
15	Number of new businesses started.

Outcome #1

1. Outcome Measures

Increase in knowledge.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The BDP is an essential component of the state's economic development engine because it helps the state's businesses grow, create jobs, increase sales and add economic vitality to Missouri communities. It is important to business owners, economic developers, communities and those who fund the program.

What has been done

Through individualized counseling and coaching, both in person and virtual, and via a variety of training and educational sessions, the BDP has assisted thousands of companies to start and grow, adding to the state's workforce and providing enhanced economic opportunity. The BDP also helps companies refine their management and marketing strategies and access financing to grow their markets and expand their facilities. Counselors use branded programs, and the BDP has implemented rigorous professional development activities, often under the direct auspices of international training programs, to ensure a consistently high level of expertise.

Results

Results were excellent; goal of 1.0 was exceeded.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #2

1. Outcome Measures

Business owners will start or expand a business as appropriate to their business goals.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	234

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

This is a vital outcome for entrepreneurs who wish to start a business, the local community and economic development leaders, chambers of commerce, area elected officials and BDP funders. Quite simply, new businesses create jobs.

What has been done

The BDP has helped 234 entrepreneurs start new companies.

Results

This figure is a slight decrease from last year, but can be attributed to a still-challenging global business environment.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #3

1. Outcome Measures

Business owners will make or revise decisions about the type of business or business structure as appropriate to their business goals.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

We do not track this as an outcome measure per se, but every company the BDP counsels makes these kinds of decisions. In that light, it matters greatly to the business owner seeking to make the best decision for her or his company.

What has been done

With focused, in-depth counseling and training, the BDP provides resources, information, coaching and counseling to assist entrepreneurs in making these decisions.

Results

Excellent. A discussion of applicable business structure is included in nearly every consultation.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #4

1. Outcome Measures

Business owners will prepare a business plan as appropriate to their business goals.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Again, we do not specifically track the number of clients who write business plans, although this is a critical element in business ownership. However, we assist a very large percentage of our client base, both new and existing, to formulate or reformulate business plans.

What has been done

Through focused counseling and training, the BDP has provided resources, information, coaching and counseling to assist entrepreneurs in developing sound business plans.

Results

Excellent. This is a key component of our business counseling to help entrepreneurs, owners and managers plan and manage effectively.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #5

1. Outcome Measures

Business owners will develop financial projections as appropriate to their business goals.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Again, this not a metric we track, but history indicates that approximately 60% of the BDP's client portfolio is incurred in financial management and corresponding projections.

What has been done

BDP staff continues to train or be certified in new software to assist companies with financial projections. An increasing number of staff is also being certified as NDC Economic Development Finance Professionals.

Results

The BDP was responsible for helping clients attract more than \$193 million in new financing this past year.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #6

1. Outcome Measures

Business owners will seek start-up funding as appropriate to their business goals.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Funding is widely acknowledged as a leading indicator for business start-up and growth. Start-ups and expansions in turn are an excellent indicator of job creation.

What has been done

The BDP provides expert technical assistance to help business owners identify and access financing. Many counselors are, or were, entrepreneurs, and are intimately familiar with the challenges of financing.

Results

The BDP helped companies acquire more than \$193 million in financing in 2014.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #7

1. Outcome Measures

Business owners will develop management systems as appropriate to their business goals.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Effective management is necessary for any business' success. Particularly for a growing company, the ability to manage an increasingly diverse workforce, delegate authority and keep pace with the marketplace is essential.

What has been done

The BDP provided additional professional development to staff who work with businesses on management issues, including training on the Baldrige criteria, balanced scorecards and lean management.

Results

While improvement in management may be difficult to quantify, success in other areas-sales, investments, expansion and jobs is an excellent indicator of improvement in management.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #8

1. Outcome Measures

Business owners will investigate legal and compliance issues for their business as appropriate to their business goals.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Every business must make sound legal decisions to ensure the best formation for startup and growth. In addition, most businesses are subject to a wide variety of state, local and federal regulations, as lack of understanding or violation of those regulations can have fatal consequences.

What has been done

BDP staff are not lawyers. And while an increasing number of counselors have gained legal expertise in specific business areas, all BDP offices maintain current lists of qualified legal advisors and make frequent referrals for their clients.

Results

BDP staff has excellent relationships in the legal community that can assist in making appropriate referrals.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #9

1. Outcome Measures

Business owners will develop a marketing plan as appropriate to their business goals.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A solid marketing strategy is essential to any successful business. But no two businesses are alike, so BDP counselors customize their research for each business, targeting the best markets and suggesting the most appropriate tactics.

What has been done

BDP counselors employ a wide array of sophisticated business research tools to conduct research appropriate to the specific client, such as ESRI, BizMiner, IBISWorld, SBDCnet, Reference USA, ProfitCents, BizMiner, resources on the Missouri Business Development Program Portal and host institution library research databases. International trade counselors use such specialized databases as GlobalEdge, UM Comtrade and World DataBank for companies interested in exporting and wanting to know best potential markets. Some research efforts are also supported through the Business Research Information Development Group (BRIDG), the dedicated research arm of the BDP. Further, a statewide Business Growth Services team uses economic gardening market research tools to assist clients in analyzing markets and gathering competitive information.

Results

The economic gardening group helped clients create 62 new jobs, increase sales by \$21 million, secure investment and equity of nearly \$4 million and generated \$150,000 in research grant proposals in the Kansas City area alone last year. Statewide data is incomplete at this point.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #10

1. Outcome Measures

Business owners will commercialize products as appropriate to their business goals.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The BDP emphasizes high-tech and other tech transfer, working closely with MU and Extension researchers and specialists, often in the same building.

What has been done

The BDP assists technology based companies from inception. As MU and Extension place more emphasis on commercialization, more counselors are being co-located with researchers, trained on the job or through formal programs. An increasing number of BDP staff and centers are co-located in university and private business parks and incubators, accelerating this process. Through these means, the BDP assisted hundreds of clients seeking to commercialize their products last year.

Results

Excellent. The BDP assists high-tech and other companies to commercialize millions of dollars each year.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #11

1. Outcome Measures

Business owners will inform stakeholders of the outcome of their work with the University of Missouri Extension Business Development as appropriate to their business goals.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Our program is entirely funded through public funds, so it is essential to connect business owners with public stakeholders to ensure funders and other program stakeholders know of the BDP's economic impact, statewide reach and effectiveness.

What has been done

BDP staff built relationships with elected officials and other stakeholders through testimonials, letters, an annual meet-and-greet legislative event and other means. We regularly communicated results via a dedicated website, a monthly e-letter, in-person visits, public presentations and print publications.

Results

The best demonstration of success in this area is the fact that we continue to be fully funded. In the past year, we received increased state funding and tapped new funding sources.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #12

1. Outcome Measures

Number of jobs created.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1674

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Job creation is probably the most widely recognized indicator of economic development at the local, state and national level, and is the one economists, politicians and most people use when gauging an economy.

What has been done

The technical assistance provided by the BDP supports job creation by helping businesses to start, grow and expand.

Results

Excellent, see figures above. Internal analysis shows that the BDP created one job for every \$1,044 in total funding, a superb metric.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #13

1. Outcome Measures

Dollar amount of sales and contracts (in millions).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1085628788

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Increased sales and government contracts help companies create jobs and build healthier communities. They also allow business owners to better meet their financial obligations and fuel growth.

What has been done

The BDP assists thousands of companies each year to increase sales, bid and secure government contracts. This is done through training, technical assistance and electronic bid matching for procurement clients.

Results

Excellent, see figures above.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #14

1. Outcome Measures

Dollar amount of business investments, including loans and equity approved loans (in millions).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	193464049

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Increased investment is an excellent indicator of a healthy, growing company. Increased investment also indicates a firm has an expectation of increasing sales and a corresponding number of employees.

What has been done

The BDP routinely assists clients to secure investment. Again, this is always an individualized approach. Staff is trained and skilled at helping clients prepare loan applications and proposals for other funding.

Results

Excellent

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #15

1. Outcome Measures

Number of new businesses started.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	234

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

New business starts are a leading indicator of economic vitality and point to a healthy level of consumer purchasing power.

What has been done

One of the BDP's main goals is to provide guidance for start-up businesses.

Results

New starts have been somewhat slow due to a still-recovering economy, but new figures show this metric is also increasing.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

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
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

Missouri's economy and business community has been gradually improving and by many measures has met or surpassed pre-recession levels, as reflected by the statistics in this report.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Customer satisfaction surveys for counseling and training are consistently above the 6 range on a 7-point scale.

Key Items of Evaluation

Number of new businesses, new jobs, new investments, increased sales and customer satisfaction ratings.

VI. National Outcomes and Indicators

1. NIFA Selected Outcomes and Indicators

Childhood Obesity (Outcome 1, Indicator 1.c)	
0	Number of children and youth who reported eating more of healthy foods.
Climate Change (Outcome 1, Indicator 4)	
0	Number of new crop varieties, animal breeds, and genotypes with climate adaptive traits.
Global Food Security and Hunger (Outcome 1, Indicator 4.a)	
0	Number of participants adopting best practices and technologies resulting in increased yield, reduced inputs, increased efficiency, increased economic return, and/or conservation of resources.
Global Food Security and Hunger (Outcome 2, Indicator 1)	
0	Number of new or improved innovations developed for food enterprises.
Food Safety (Outcome 1, Indicator 1)	
0	Number of viable technologies developed or modified for the detection and
Sustainable Energy (Outcome 3, Indicator 2)	
0	Number of farmers who adopted a dedicated bioenergy crop
Sustainable Energy (Outcome 3, Indicator 4)	
0	Tons of feedstocks delivered.