

# 2011 Kansas State University Combined Research and Extension Plan of Work

Status: Accepted

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## I. Plan Overview

### 1. Brief Summary about Plan Of Work

The motto of K-State Research and Extension is Knowledge for Life. This is a great motto for a land-grant university, such as Kansas State University. It means developing new knowledge and empowering people with that knowledge, whether they are our youth and 4-H clubs or our senior citizens. In order to accomplish this as we prepare for a new planning cycle, K-State Research and Extension is focusing its efforts on five planned programs: Global Food Security and Hunger; Food Safety; Natural Resources and Environmental Management; Childhood Obesity and Nutrition through the Lifespan; and Healthy Communities: Youth, Adults, and Families.

We cannot be everything to everyone; therefore, we have to focus on serving the highest priorities. Obviously, this also requires that we have the breadth to address other issues. Whether we develop the knowledge within K-State Research and Extension or work with another land-grant university or an industry partner to develop that knowledge, we must disseminate that knowledge on the K-State campus and the informal classrooms in all 105 counties across the state of Kansas. A unique feature within the K-State Research and Extension organization is the close alignment of research and extension. In 1996, K-State Research and Extension (KSRE) was formed by aligning the Kansas Agricultural Experiment Station and the Kansas Cooperative Extension Service. The strategic intent of this alignment was to achieve greater efficiency and synergy between discovery and outreach efforts.

Within the five planned programs, each of seven strategic opportunities identifies a broad issue that is being addressed, the research foundation associated with it, and changes that will be measured over time. The strategic opportunities define areas of emphasis for agents, specialists, and researchers. Estimating FTEs/SYs across federal, state, and county funding sources, due to budget reductions the number of positions will decrease. Anticipated mid-year reductions also will affect this plan. Planned programs are mostly state supported and through grant funds, also extensively reported through CRIS and the granting agencies.

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

Year	Extension		Research	
	1862	1890	1862	1890
2011	400.0	0.0	255.0	0.0
2012	400.0	0.0	255.0	0.0
2013	400.0	0.0	255.0	0.0
2014	400.0	0.0	255.0	0.0
2015	400.0	0.0	255.0	0.0

## II. Merit Review Process

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

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

## 2. Brief Explanation

Scientific peer review and merit review of all K-State Research and Extension Action Plan proposals will be accomplished by experts with scientific knowledge and technical skills to evaluate the quality and relevance to program goals. This includes projects funded by Hatch Multistate Research Funds, Hatch Funds, Smith-Lever, and state appropriated funds. The Associate Director of Research and/or the Associate Director of Extension select three peer reviewers on campus for specific proposals in consultation with department heads to identify reviewers with appropriate expertise. The plans are also reviewed by a panel of department heads, the associate directors of research and extension, assistant directors (Ag and Natural Resources, 4-H and Youth programs, Family and Consumer Sciences), as well as area directors. The agreement and acceptance within the team and the review by unit leaders and administrators, as well as peer reviewers assures that action plans adequately and appropriately address the issues. Several representative stakeholders will be invited to participate in the annual team meetings as well. The review asks for an evaluation of the following points: overall appropriateness to K-State Research and Extension core mission themes and long-term intended outcomes; the investigators' grasp of the literature including a review of the most significant published work in the field; and a description of the current status of science in the area of the proposal. Also, do the objectives show a specific relationship to the improvement of Kansas agriculture and societal issues? Does the description of the project identify in non-technical language the methods or actions to be utilized in carrying out the proposed project? Do the methods relate to accomplishing each stated objective and are the methods stated clearly? A recommendation of approval or disapproval should be included in the review. A form is used to guide reviewers through the peer review process.

## III. Evaluation of Multis & Joint Activities

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

The programs and research activities that are planned represent the culmination of an extensive process of incorporating stakeholder input. Additionally, the planning process involved through vetting against extension and research priorities reported from USDA, NIFA, and ARS as well as through commodity-based organizations. Faculty groups interact continually with external groups of agencies, organizations, and citizens to gain stakeholder feedback that has helped these efforts in terms of relevance, support, and understanding. All of this input has been utilized to focus the upcoming five year plan for K-State Research and Extension.

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

An extension agent in southwest Kansas began programming for Burmese and Somali populations to help them make the transition to Kansas and American life easier. In addition to the language barrier, they face challenges in everyday life (i.e., learning to cook, clean, and do laundry). Landlords are concerned about safety and cleanliness due to tenant's lack of knowledge and experience in caring for apartments and using appliances.

An emerging and growing effort within K-State Research and Extension is a summer research program specifically targeting under-represented populations of students to establish networking relationships back to their respective home institutions. Although the undergraduate institutions of these students have not exclusively been from 1890 Land Grants, those institutions have heavily dominated the applicant pool to date. This program places these students in a laboratory or field setting with a K-State Research and Extension scientist to work on a very focused set of research goals that can be accomplished in the eight-week program. This program has a specific goal of growing the minority populations of students within graduate programs in the College of Agriculture and across other partner Colleges represented within K-State Research and Extension. These programs are funded in part by funds originating in the Kansas Agricultural Experiment Station and College of Agriculture Dean's Office and they are designed ultimately to grow the representation of these students in academic and industry fields to diversify the workforce in areas traditionally dominated by majority races and genders. Additional activities that continue were reported in the previous Plan of Work. In brief, K-State Research and Extension continues to be involved in programs addressing the needs of economically disadvantaged agricultural producers, youths, families, and communities and provide knowledge, skills, and practices where needs are great. These include programs targeting military families in and around Fort Riley; Latino and other Spanish-speaking residents, primarily in Wyandotte County; and Family Nutrition Program (FNP) that targets low income and ethnically diverse populations. There is no formal working arrangement between Haskell Indian Nations University and KSRE at this point.

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

The next five year planning process for K-State Research and Extension continues to be ongoing. Within our five planned programs, the plan currently includes seven strategic opportunities. Those opportunities are as follows:

Sustain Profitable Agricultural Production Systems; Prepare People in Kansas to Thrive in a Global Society and All Aspects of Life; Ensure an Abundant and Safe Food Supply for All; Enhance Effective Decision-making Regarding Environmental Stewardship; Identify Pathways for Efficient and Sustainable Energy Use, Assist Communities in Becoming Sustainable and Resilient to the Uncertainties of Economics, Weather, Health, and Security; and Create Opportunities and Support People in Kansas to Improve Their Physical, Mental, and Emotional Health and Well-Being. Detailed intended outcomes and strategies for implementation and evaluation are developing within each strategic opportunity.

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

K-State Research and Extension supports a diverse portfolio of research and extension programming efforts. These programs cross broad discipline areas and include on-campus faculty that represent five academic colleges. For this reason, there is obvious need for program planning to help avoid mission drift away from programs that are more central to key programs impacting economic drivers and the lives of citizens of the state of Kansas. Therefore, it is expected that the planned programs will continue to foster focus on the most critical issues. In most programs, the results of extension education provide guidance to the research agenda and extension education develops as a result of research findings. Extension activities with the public will identify areas of knowledge that lack research information. This void of research information is utilized by researchers to guide future investigations. Focusing on the highest priorities and using feedback from previous planned programs allows us to engage in continuous improvement in terms of effectiveness and efficiency.

### **IV. Stakeholder Input**

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

- Survey of traditional stakeholder groups
- Survey of selected individuals from the general public

##### **Brief explanation.**

In 2009, K-State Research and Extension has undergone identification of the strategic opportunities for our combined research and extension initiatives for the coming year. A team worked to put together a series of strategic statements. Those statements were distributed in a survey form to our stakeholders across Kansas using the local Extension unit network. Surveys were returned and a hierarchy of feedback has resulted in on-going work towards identifying the key research and extension program initiatives that align well with the priorities indicated with the survey. Budget resources will follow those priorities.

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

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

- Use Advisory Committees
- Use Surveys

##### **Brief explanation.**

Stakeholder input will come through external advisory councils, elected officials, strategic planning, and program review processes. At the local level, the Kansas Cooperative Extension Service law dictates election of local advisories and an executive board in each of our 105 counties. This amounts to publicly electing 2,520 individuals across the state. Of those, 945 are further elected to executive boards and are required by law to oversee the program, staff, and budget of our local Extension units across Kansas. On a regional level, our research and extension centers make use of advisory committees composed of stakeholder leadership and clientele from the local area. During the year we also meet informally with a large number of diverse organizations to discuss collaborative efforts, consider sharing of resources, review prioritization process, assess progress reports and realized outcomes, and to design complementary educational efforts. Feedback examples include commodity commissions (e.g., deliberations that help prioritize the awarding of producer-funded extramural grants involving check-off dollars) and helping citizens to understand options associated with regulatory decisions made by the EPA, Kansas Department of Health and Environment, Kansas Department of Agriculture, and other groups.

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

**1. Methods for collecting Stakeholder Input**

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder individuals
- Survey specifically with non-traditional individuals
- Survey of selected individuals from the general public

**Brief explanation.**

Early in 2009, a survey was completed with the program development committee members across the state (2500 stakeholders). We asked these stakeholders to reflect on their input through a cross-section of the demographics of their respective communities. An annual survey of family and consumer sciences program interests is conducted with specific instruction to take the surveys to individuals who do represent the diverse demographics of the local communities. Extension agents invite broader stakeholder groups into planning sessions to establish local issues, needs, and program priorities.

**3. A statement of how the input will be considered**

- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Action Plans
- To Set Priorities

**Brief explanation.**

The purpose of the planning process toward an identified set of strategic opportunities for research and extension was to identify and give attention to these initiatives to assure a relevant, sustainable, quality Extension Service in Kansas for the future. The stakeholder input process is a comprehensive effort to focus on critical issues and problems needing research and seek answers that fit well within our defined mission priorities. This input continues throughout planning, project implementation, and program delivery. Of the 2520 publicly elected according to Kansas Extension law, 945 are further elected to executive boards and are required by law to oversee the program, staff, and budget of our local Extension units across Kansas.

**V. Planned Program Table of Content**

<b>S. No.</b>	<b>PROGRAM NAME</b>
1	Global Food Security and Hunger
2	Food Safety
3	Natural Resources and Environmental Management
4	Childhood Obesity, Healthy Eating and Physical Activity through the Lifespan
5	Healthy Communities: Youth, Adults and Families

**V(A). Planned Program (Summary)****Program # 1****1. Name of the Planned Program**

Global Food Security and Hunger

**2. Brief summary about Planned Program**

Interest in and commitment to finding solutions for global food security and hunger continues to guide K-State Research and Extension to: Develop animal and crop production systems that thrive in the variable conditions of the Great Plains; develop horticulture, forestry, and alternative green enterprises that thrive in the variable conditions of the Great Plains; advance new and improved systems of agricultural production that meet the needs of producers and consumers; enhance the value of agricultural products; improve access to high quality foods, especially for consumers with limited resources, and increase food variety and value by developing new and enhanced food products.

**3. Program existence :** Mature (More than five years)

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

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

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

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
201	Plant Genome, Genetics, and Genetic Mechanisms	5%		10%	
205	Plant Management Systems	29%		14%	
216	Integrated Pest Management Systems	5%		10%	
307	Animal Management Systems	37%		19%	
311	Animal Diseases	0%		24%	
501	New and Improved Food Processing Technologies	2%		2%	
502	New and Improved Food Products	0%		1%	
511	New and Improved Non-Food Products and Processes	2%		1%	
601	Economics of Agricultural Production and Farm Management	19%		14%	
603	Market Economics	1%		0%	
606	International Trade and Development	0%		5%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)****1. Situation and priorities**

• Agriculture plays a very significant role in the Kansas economy. Of the total cash receipts from agriculture in recent years, approximately two-thirds of those receipts were derived from livestock and their associated products. The state ranks third in number of cattle on feed, number of cattle processed, and total beef production; ninth in hogs on farms, 10th in market sheep and lambs, 18th in milk produced and in sheep and lambs on farms, and 19th in meat and other goats. Kansas has one of the fastest growing dairy industries in the nation (60% production increase since 1998) with new annual product sales that exceed \$80 million. Producing 450,000,000 pounds of pork, (1.65 million head), Kansas ranks 9th in state swine production with 310 operations producing 95% of the state's pork. • Kansas farmers produce approximately 22 million acres of wheat, corn, grain sorghum, soybeans, sunflowers, and alfalfa each year, generating about \$3 billion of revenue. Flour milling and livestock production have traditionally multiplied the value of crops produced. Recent construction of fuel ethanol plants in many communities has also added to that multiplier. In addition, perennial forage resources in Kansas consist of about 17 million acres of rangeland and 2.3 million acres of tame pasture. The diverse and often harsh Kansas environment presents a series of challenging, high risk decisions for those producing grain and forage crops and managing range and pasture land. • Kansas also has a diverse and growing horticultural industry composed of turf grasses (golf courses, lawns, and roadways), floral crops, ornamentals, nursery businesses and fruit, nut, and vegetable production. More than 788,000 acres in Kansas are involved in horticulture activities, more than double the acres reported in 2000. The value of all horticultural products in the state continues to increase and presently exceeds \$1 billion annually. • The Bioprocessing and Industrial Value Added Program (BIVAP) facility provides a means for research and incubation of novel product industry. The industrial value-added product group develops and improves technologies that utilize agricultural raw materials available in Kansas to produce higher value products. The fiber and textile program focuses on the development of industrial value-added materials and products made from natural and manufactured fibers that are essential to human health, safety and comfort, and contribute to local and national economies.

Current data on household food insecurity and hunger across the U.S. and Kansas show that, while national levels of food insecurity and hunger did not change significantly in 2007, food insecurity rates in Kansas continued to rise. Rates of household food insecurity in Kansas in 2005-2007 (a period of economic growth) were 2% higher than national rates.

Access to high-quality local foods has been determined to positively affect consumers' diets, particularly the intake of fresh fruits and vegetables in young families and seniors with limited resources. Though Kansas enjoys nearly 100 farmers markets statewide, fewer than 10 support even one program or effort designed as food aid measures (i.e., WIC, electronic benefit transfers, or the Senior Farmers Market Nutrition Program). High quality foods may be accessible to many Kansans, but are less likely available to those with limited resources.

## 2. Scope of the Program

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

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

### 1. Assumptions made for the Program

Profitability is critical for long-term business survival; however, because agriculture is so dynamic (e.g., markets, technology, policy) producers need to constantly evaluate what enterprises and production systems are the most profitable. In addition, agriculture is very capital intensive and producers need to identify the most efficient ways to access capital (e.g., lease versus buy land, own machinery versus custom hire).

### 2. Ultimate goal(s) of this Program

Sustainable Profitable Agricultural Production Systems  
An Abundant and Safe Food Supply for All

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

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

Year	Extension		Research	
	1862	1890	1862	1890
2011	108.0	0.0	175.0	0.0
2012	108.0	0.0	175.0	0.0
2013	108.0	0.0	175.0	0.0
2014	108.0	0.0	175.0	0.0
2015	108.0	0.0	175.0	0.0

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

**1. Activity for the Program**

Sustain Profitable Agricultural Production Systems--

- Develop animal and crop production systems that thrive in the variable conditions of the Great Plains.
- Develop horticulture, forestry, and alternative green enterprises that thrive in the variable conditions of the Great Plains.
- Advance new and improved systems of agricultural production to meet the need of producers and consumers.
- Enhance the value of agricultural products.

Ensure an Abundant Food Supply for All--

- Improve access to high quality foods, especially for consumers with limited resources.
- Increase food variety and value by developing new and enhanced food products.

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

**Extension**

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>• Workshop</li> <li>• One-on-One Intervention</li> <li>• Demonstrations</li> <li>• Other 1 (Field Days, Tours)</li> <li>• Other 2 (Proprietary tech dev &amp; licensing)</li> </ul>	<ul style="list-style-type: none"> <li>• Newsletters</li> <li>• Web sites</li> <li>• Other 1 (Extension publications)</li> <li>• Other 2 (Research publications)</li> </ul>

**3. Description of targeted audience**

Farm and ranch managers; agricultural producers and agribusinesses throughout the food industry supply chain with emphasis on producers who want to help themselves; people who influence producers and producer decisions, including educators (veterinarians, media, industry organizations, packers/purchasers); government agencies/ regulators; the lending industry; and policy makers.

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

**1. Standard output measures**

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



	<b>Direct Contact Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>
<b>Year</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>
2011	10000	0	1000	0
2012	10000	0	1000	0
2013	10000	0	1000	0
2014	10000	0	1000	0
2015	10000	0	1000	0

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

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

**3. Expected Peer Review Publications**

<b>Year</b>	<b>Research Target</b>	<b>Extension Target</b>	<b>Total</b>
2011	25	15	0
2012	25	15	0
2013	25	15	0
2014	25	15	0
2015	25	15	0

**V(H). State Defined Outputs****1. Output Target**

- Number of individuals participating in programs

**2011:10000      2012:10000      2013:10000      2014:12000      2015:12000**

- Number of new/improved varieties, inbreds, germplasm developed and released

**2011:3      2012:3      2013:3      2014:4      2015:4**

- Number of educational events (e.g., meetings, demonstrations, field days, press releases, and distributed publications) delivered

**2011:650      2012:650      2013:700      2014:700      2015:750**

- Number of producers engaged in one-on-one consultations through Kansas Farm Management Association or Farm Analyst programs

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

- Number of presentations at national and international conferences

**2011:15      2012:15      2013:15      2014:15      2015:15**

- Number of research papers cited above a threshold (10)--indicative of high impact

**2011:15      2012:16      2013:17      2014:18      2015:20**

- Number of research grants received in excess of \$50,000.

**2011:2      2012:2      2013:3      2014:3      2015:5**

**V(I). State Defined Outcome**

O. No.	Outcome Name
1	Number of participating livestock producers who demonstrate best management practices (BMPs) in regard to management and production, including genetic selection, reproduction, nutrition, health, animal care and well-being, livestock safety and quality, environmental management, and optimal marketing strategies
2	Number of Kansas farms and ranches increasing awareness of financial performance
3	Number of acres planted to KAES-developed materials or materials derived from KSU varieties, inbreds, or germplasm
4	Number of crop acres using soil testing as a basis for nutrient applications
5	Percent of producers demonstrating improvement of Kansas ground and surface water with respect to nutrient loads
6	Number of soil samples evaluated on Kansas crop acreage
7	Changes in average or typical observed cropping systems, rotations, and crops
8	Hours and activities reported annually by Master Gardener volunteers
9	Number of participating cow/calf producers who lower cow feed supplement costs through use of BRaNDS software to make informed, cost-effective purchase decisions.
10	Number of new processes to improve utilization of biological raw materials as bioconversion substrates.

**Outcome # 1****1. Outcome Target**

Number of participating livestock producers who demonstrate best management practices (BMPs) in regard to management and production, including genetic selection, reproduction, nutrition, health, animal care and well-being, livestock safety and quality, environmental management, and optimal marketing strategies

**2. Outcome Type : Change in Condition Outcome Measure**

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

**3. Associated Knowledge Area(s)**

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

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 2****1. Outcome Target**

Number of Kansas farms and ranches increasing awareness of financial performance

**2. Outcome Type : Change in Condition Outcome Measure**

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

**3. Associated Knowledge Area(s)**

- 601 - Economics of Agricultural Production and Farm Management

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3****1. Outcome Target**

Number of acres planted to KAES-developed materials or materials derived from KSU varieties, inbreds, or germplasm

**2. Outcome Type : Change in Condition Outcome Measure**

**2011:6500000                      2012:7000000                      2013:7000000                      2014:7000000                      2015:7000000**

**3. Associated Knowledge Area(s)**

- 201 - Plant Genome, Genetics, and Genetic Mechanisms

**4. Associated Institute Type(s)**

- 1862 Research

**Outcome # 4**

**1. Outcome Target**

Number of crop acres using soil testing as a basis for nutrient applications

**2. Outcome Type : Change in Condition Outcome Measure**

**2011:4000000      2012:4000000      2013:4000000      2014:4000000      2015:4000000**

**3. Associated Knowledge Area(s)**

- 205 - Plant Management Systems

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 5**

**1. Outcome Target**

Percent of producers demonstrating improvement of Kansas ground and surface water with respect to nutrient loads

**2. Outcome Type : Change in Condition Outcome Measure**

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

**3. Associated Knowledge Area(s)**

- 205 - Plant Management Systems

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 6**

**1. Outcome Target**

Number of soil samples evaluated on Kansas crop acreage

**2. Outcome Type : Change in Action Outcome Measure**

**2011:13000      2012:13000      2013:13000      2014:13000      2015:13000**

**3. Associated Knowledge Area(s)**

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

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 7**

**1. Outcome Target**

Changes in average or typical observed cropping systems, rotations, and crops

**2. Outcome Type : Change in Action Outcome Measure**

<b>2011:5</b>	<b>2012:5</b>	<b>2013:5</b>	<b>2014:5</b>	<b>2015:5</b>
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**3. Associated Knowledge Area(s)**

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

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 8**

**1. Outcome Target**

Hours and activities reported annually by Master Gardener volunteers

**2. Outcome Type : Change in Knowledge Outcome Measure**

<b>2011:85000</b>	<b>2012:85000</b>	<b>2013:90000</b>	<b>2014:90000</b>	<b>2015:90000</b>
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**3. Associated Knowledge Area(s)**

- 205 - Plant Management Systems

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 9**

**1. Outcome Target**

Number of participating cow/calf producers who lower cow feed supplement costs through use of BRaNDS software to make informed, cost-effective purchase decisions.

**2. Outcome Type : Change in Action Outcome Measure**

<b>2011:300</b>	<b>2012:250</b>	<b>2013:250</b>	<b>2014:250</b>	<b>2015:250</b>
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**3. Associated Knowledge Area(s)**

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

#### 4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

#### Outcome # 10

##### 1. Outcome Target

Number of new processes to improve utilization of biological raw materials as bioconversion substrates.

##### 2. Outcome Type : Change in Action Outcome Measure

2011:1

2012:1

2013:2

2014:2

2015:2

##### 3. Associated Knowledge Area(s)

- 511 - New and Improved Non-Food Products and Processes

##### 4. Associated Institute Type(s)

- 1862 Research

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

##### 1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Other (Technological change)

##### Description

From past experience, any or all of these factors can significantly impact outcomes of this planned program.

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

##### 1. Evaluation Studies Planned

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

##### Description

A combination of the planned studies will provide the most useful and comprehensive results.

##### 2. Data Collection Methods

- Sampling
- On-Site
- Observation

**Description**

Selected methods are self-explanatory.

For value-added, data collection will be mostly on-site as new plants are built, rural economies expand, and new licenses are applied. Other metrics will be extramural funding, industry partners, patents, licenses, publications, presentations at national/international meetings.



**V(A). Planned Program (Summary)****Program # 2****1. Name of the Planned Program**

Food Safety

**2. Brief summary about Planned Program**

Concern about ensuring a safe food supply continues to guide K-State Research and Extension (KSRE) to develop programs that: Enhance the safety of our food supply by reducing or eliminating hazards from food production to consumption; and improve protection and defense strategies to safeguard the food supply.

KSRE has a rich history of working with pre-harvest (animal and plant production) and post-harvest (food microbiology and toxicology) issues that impact food safety. Many of the pre- and post-harvest food safety issues can impact human health, whereas others may impact our agricultural infrastructure, food supply, and economy. Food safety research, teaching, and extension efforts have put K-State Research and Extension in a strong position to address this new era of food security.

**3. Program existence :** Mature (More than five years)

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

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

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

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
702	Requirements and Function of Nutrients and Other Food Components	15%		15%	
703	Nutrition Education and Behavior	30%		20%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	15%		15%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	30%		30%	
723	Hazards to Human Health and Safety	0%		10%	
724	Healthy Lifestyle	10%		0%	
802	Human Development and Family Well-Being	0%		10%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)****1. Situation and priorities**

Public awareness of food safety has been increasing due to recent nationwide outbreaks and attention given to the outbreaks of Salmonella Typhimurium in peanuts/peanut butter and E. coli O157:H7 associated with fresh spinach. The threat of bioterrorism on the safety of the food supply is also a public concern. There are an estimated 76 million cases of foodborne disease (illness) each year in the U.S., resulting in about 325,000 hospitalizations and 5,000 deaths. The most severe cases tend to occur in the very old, the very young, those who have an illness already that reduces their immune system function, and in healthy people exposed to a very high dose of an organism. The increase in the consumer food dollar being spent on

foods prepared outside the home, would support the need for food safety education programs targeting foodservice operations, (e.g., restaurants, schools, hospitals, care home, childcare centers, grocery stores).

The Kansas Department of Health and Environment, Office of Surveillance & Epidemiology reported 20 foodborne outbreaks and 1271 foodborne cases in 2007. Most cases of foodborne illness can be prevented through proper hygiene practices like hand washing and by following proper food handling and preparation recommendations. There is an increased interest in locally grown foods and home food preservation among Kansas residents. These trends will require additional food safety education relevant to these practices. In the 2007-2008, K-State Research and Extension Family and Consumer Science Program Survey of 2065 Kansas citizens, 83.4% indicated that handling food safely at home was important; 76% identified preserving food safely at home as important. This same survey indicated that 74.1% of the respondents stated that keeping food safe when eating out (restaurants) was important. The March 2009, KSRE PDC Strategic Opportunities Survey (564 county PDC members), showed that 86% of the respondents indicated that enhancing the safety of the food supply was important or somewhat important.

**2. Scope of the Program**

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

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

**1. Assumptions made for the Program**

New emerging issues and pathogens derailing set program; lack of resources: financial and personnel; ability to respond to emergencies

**2. Ultimate goal(s) of this Program**

Ensure a Safe Food Supply for All

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

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

Year	Extension		Research	
	1862	1890	1862	1890
2011	56.0	0.0	12.0	0.0
2012	56.0	0.0	12.0	0.0
2013	56.0	0.0	12.0	0.0
2014	56.0	0.0	12.0	0.0

Year	Extension		Research	
	1862	1890	1862	1890
2015	56.0	0.0	12.0	0.0

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

**1. Activity for the Program**

- Develop new rapid methods for the surveillance, detection, isolation, and quantification of microbes and chemical residues in animals, plants, and food products.
- Develop risk monitoring techniques to detect potential hazards in the distribution chain.
- Validate the efficacy of techniques in controlling and eliminating microbial and chemical hazards.
- Disseminate food safety and bio-security information through extension and research seminars, workshops, and resident and distance education programs, using a variety of media options and communication tools.
- Offer safe food production, handling, and sanitation education to groups involved in all levels of food production and service.
- Identify best management practices to prevent foodborne illness and to enhance the security of the food supply throughout the food chain.
- Develop technology to reduce the hazards and improve the quality of animal food products, which will complement the development of HACCP programs by USDA.
- Develop, complement, and maintain an aggressive technology transfer system that effectively communicates work about Safe Food and Human Nutrition to consumers, students, industry, government, and other scientific investigations.

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

**Extension**

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>• Education Class</li> <li>• Workshop</li> <li>• Group Discussion</li> <li>• One-on-One Intervention</li> <li>• Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>• Newsletters</li> <li>• Web sites</li> <li>• Other 1 (professional &amp; trade journals)</li> <li>• Other 2 (white papers; OpEd articles)</li> </ul>

**3. Description of targeted audience**

- Growers and processors of agricultural commodities, commercial and non-commercial food service personnel, market and home gardeners, other food handlers, retail markets, consumers, and educator;
- Families and individuals of all ages living in Kansas, including populations with limited resources; low literacy skills; varying ethnicities; disabilities, diseases, or impairments; and documented or identifiable health disparities;
- Economic stakeholders, and policy and funding agencies;
- Health care, education, and nutrition professionals;
- K-State Research & Extension faculty and staff with responsibilities for food and/or nutrition;
- Government; and
- Consumer groups (i.e., STOP).

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

**1. Standard output measures**

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

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	500	0	500	0
2012	500	0	500	0
2013	500	0	500	0
2014	500	0	500	0
2015	500	0	500	0

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

**2011:0                      2012:1                      2013:1                      2014:0                      2015:0**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2011	20	2	0
2012	20	2	0
2013	20	2	0
2014	20	2	0
2015	20	2	0

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

**1. Output Target**

- Number of rapid methods developed for the surveillance, detection, isolation, and quantification of microbes and chemical residues in animals, plants, and food products

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

- Number of therapeutic, chemical, and physical treatments developed for animals and plants and their products to eliminate or reduce contamination with potential hazards

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

- Number of ServSafe certification workshops

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

**V(I). State Defined Outcome**

O. No.	Outcome Name
1	Number of participants demonstrating increase in knowledge level and attitude of clientele in safe food production, handling, and sanitation programs; best management practices to prevent foodborne illness; and social, economic, and communications issues related to food safety and agricultural bio-security
2	Number of participants in food service manager certification class who successfully complete the exam.
3	Number of food service employees who complete employee level food safety course.
4	Number of foodservice facilities with trained employees

**Outcome # 1**

**1. Outcome Target**

Number of participants demonstrating increase in knowledge level and attitude of clientele in safe food production, handling, and sanitation programs; best management practices to prevent foodborne illness; and social, economic, and communications issues related to food safety and agricultural bio-security

**2. Outcome Type : Change in Knowledge Outcome Measure**

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

**3. Associated Knowledge Area(s)**

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Number of participants in food service manager certification class who successfully complete the exam.

**2. Outcome Type : Change in Knowledge Outcome Measure**

**2011:300                      2012:300                      2013:300                      2014:325                      2015:325**

**3. Associated Knowledge Area(s)**

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

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Number of food service employees who complete employee level food safety course.

**2. Outcome Type : Change in Knowledge Outcome Measure**

**2011:300                      2012:300                      2013:400                      2014:400                      2015:450**

**3. Associated Knowledge Area(s)**

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

#### 4. Associated Institute Type(s)

- 1862 Extension

#### Outcome # 4

##### 1. Outcome Target

Number of foodservice facilities with trained employees

##### 2. Outcome Type : Change in Action Outcome Measure

2011:60

2012:60

2013:60

2014:60

2015:60

##### 3. Associated Knowledge Area(s)

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety

#### 4. Associated Institute Type(s)

- 1862 Extension

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

##### 1. External Factors which may affect Outcomes

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

##### Description

From past experience, any or all of these factors can impact outcomes of this planned program.

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

##### 1. Evaluation Studies Planned

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

##### Description

- Initiatives funded by other sources (i.e., industry)
- Clientele that utilize programs (i.e., number of students taking food science/safety courses)

##### 2. Data Collection Methods

- Sampling
- Mail
- On-Site
- Structured
- Unstructured
- Observation
- Tests
- Other (see below)

**Description**

- Enrollment in programs and student feedback/evaluations



**V(A). Planned Program (Summary)****Program # 3****1. Name of the Planned Program**

Natural Resources and Environmental Management

**2. Brief summary about Planned Program**

Concern about the quality of the environment continues to guide K-State Research and Extension to develop programs that: Improve and protect soil and water quality in agricultural, rural, and urban landscapes and watersheds; conserve and prolong the life of the Ogallala Aquifer and other important surface and groundwater resources while sustaining communities dependent on those water resources; improve understanding of sources, fate, and transport of air emissions from confined animal feeding, agricultural burning and tillage, soil erosion, and other activities; improve understanding of natural resource, environmental, economic, and social impact of changing climate and energy needs; identify and assess opportunities for economic development through alternative energy; and enhance knowledge and skills about efficient energy practices.

**3. Program existence :** Mature (More than five years)

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

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

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

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
102	Soil, Plant, Water, Nutrient Relationships	15%		15%	
111	Conservation and Efficient Use of Water	30%		30%	
112	Watershed Protection and Management	30%		20%	
121	Management of Range Resources	15%		20%	
141	Air Resource Protection and Management	10%		15%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)****1. Situation and priorities**

• Soil, water, and energy conservation is crucial to sustain the viability of the agricultural economy in Kansas. In western Kansas, the Ogallala Aquifer supports irrigated crop agriculture that provides feed grains for a robust animal feeding industry, as well as providing water for municipal and industrial uses. The aquifer is a finite resource with recharge rates of near zero or so small as to be dwarfed by withdrawal rates. Large areas of Kansas have only a 20-50 years supply at current extraction rates. Water use and availability, the economics of water extraction and crop production, technology development and adoption, and current and new policies will determine the viability of agriculture in Kansas and the useable life of the aquifer. • For areas of rainfed crop production, especially in central and eastern Kansas, strategies for more efficient capture and use of water and for protection of soil against erosion are critical. There is also an opportunity to better manage soils for carbon sequestration and not only sustain productivity but mitigate increasing ambient concentrations of carbon dioxide. • Agricultural production of biomass is a promising source of renewable energy derived from direct burning for electricity generation and processing into chemical feedstocks and fuels. Use of biofuels will enhance national energy security and promote

sustainability of rural economies and social structure. Even though Kansas has a strong production agriculture base that could produce biofuels on a large scale, there will be a need to balance their production with existing agricultural and urban demands on our land and water resources. Developing a conservation approach to agricultural production of biofuels could help meet water quality and conservation goals, protect farmlands, improve biodiversity and wildlife habitat, enhance rural economic opportunities, and simultaneously contribute to national renewable energy goals

• Abundant clean water is crucial to the Kansas economy. Much of Kansas depends on surface water in streams or reservoirs that provide drinking water sources, municipal and other domestic and industrial uses, recreation, livestock watering, and other agricultural uses to vast areas of Kansas. The state has several designated high priority Total Maximum Daily Loads (TMDLs) streams and watersheds where water quality restoration actions are needed. Many of the streams are impaired for fecal coliform bacteria and dissolved oxygen (an indicator of sediment, nutrient, and organic matter loading), while many reservoirs are impaired for eutrophication. Common sources of fecal bacteria include livestock in and/or near streams, human contributions from municipal sewage systems or from individual on-site waste systems, and sometimes wildlife. Common sources of nutrient, sediment, and organic loading are from confined livestock, non-confined livestock, and cropland. Watershed remediations with leadership and engagement by local stakeholders are needed to address many of the water quality problems in Kansas. • Almost half (42%) of the nation's fed beef supply is produced and processed on the High Plains of Texas and southwestern Kansas, with projections of continued growth not only in fed beef cattle, but also large scale dairies and swine production, which are relocating to the region. Air quality issues are presenting major challenges for confined animal feeding, as dust and odor-related complaints by the public become more frequent. Animal agriculture is a major source of ammonia, which when combined with other gaseous pollutants, can form respirable particulate matter and contribute to regional haze problems; Kansas is among the seven states that have the highest ammonia emissions in the U.S., according to the United States Environmental Protection Agency. Best Management Practices for minimizing emissions need to be developed, tested, and delivered to producers. • This is a unique opportunity for agriculture to provide solutions that help provide independence from foreign energy suppliers, invigorate our rural economy, and improve national security. However, additional research is needed to improve the efficiencies for bioconversion. Once improved technologies are established, we can provide ongoing technical outreach to assure that the newest developments are applied in this rapidly advancing industry.

## **2. Scope of the Program**

- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

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

### **1. Assumptions made for the Program**

- There is effort underway to re-evaluate water use policy, make adjustments, and provide incentives for water conservation and wise use that will prolong the life of the Ogallala Aquifer. However, these actions need to be coupled with and built upon a sound scientific information base.
- Finite petroleum resources must be replaced by bio-based resources for production of many of our product and energy needs. A key area of research is learning how to better utilize the cellulosic components of our bio-based resources.

### **2. Ultimate goal(s) of this Program**

Enhance Effective Decision-Making Regarding Environmental Stewardship:

- Water Conservation and Management -- Prolong the life of the Ogallala Aquifer and sustain rural economies by developing and disseminating information about new water conservation and management technologies
- Improved Quality of Land, Air, and Water
- Identify Pathways for Efficient and Sustainable Energy Use

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

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

Year	Extension		Research	
	1862	1890	1862	1890
2011	30.0	0.0	44.0	0.0
2012	30.0	0.0	44.0	0.0
2013	30.0	0.0	44.0	0.0
2014	30.0	0.0	44.0	0.0
2015	30.0	0.0	44.0	0.0

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

**1. Activity for the Program**

- Understand the sources, fate, and transport of important water contaminants (i.e., fecal coliform bacteria, nutrients, sediment, and pesticides [especially atrazine herbicide]), and develop and determine the environmental and economic effectiveness of best management practices for these potential contaminants.
- Quantify the environmental and economic effectiveness of best management practices for improving water quality at the watershed level.
- Provide technical assistance and support to watershed groups who are developing and implementing Watershed Restoration and Protection Strategies (WRAPS) in Kansas.
- Disseminate science-based information through environmental education programs for both youth and adults, and deliver extension programs aimed at stakeholders that focuses on adoption of best management practices in targeted areas for water quality improvement.
- Develop and test strategies for improved management of water, both irrigation and precipitation, within existing cropping systems, and test designs, performance, and management of equipment and systems used for irrigation.
- Develop and test new crop, livestock, bioenergy, and riparian forest systems that will reduce water use while optimizing productivity, environmental quality, and profitability, including water saving technologies for concentrated animal feeding operations (CAFOs) and industries that process agricultural commodities.
- Develop an information and education program for policy makers, producers, water professionals, and youth audiences with respect to the Ogallala Aquifer, including assessment of the potential impacts of climate change on this important water resource.
- Develop science-based emission factors for dust and ammonia at beef cattle feedlots, that include understanding the conditions under which high emissions occur and the animal health effects associated with high emissions.
- Develop an understanding of air quality impacts of rangeland burning, including extent and timing of burn events, influence of fuel load on emissions, modeling the downwind transport of particulate matter, and developing a climatology of extreme events.
- Disseminate science-based information and transfer technologies to stakeholders, and implement youth education programs focused on air quality.
- Determine the community level impacts of biofuel production and processing.
- Determine the impacts of cellulosic ethanol production on land use, soil conservation and quality, and water conservation and quality.
- Determine the economic impacts and trade-offs associated with biofuel production and processing based on both grain and cellulosic ethanol.
- Disseminate science-based information regarding the sustainability of biofuel production and processing.
- Develop new processes to modify agricultural-based materials into higher value products.

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

**Extension**

Direct Methods	Indirect Methods
----------------	------------------

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Education Class</li> <li>• Workshop</li> <li>• One-on-One Intervention</li> <li>• Demonstrations</li> <li>• Other 1 (Tours)</li> <li>• Other 2 (Fair and conference displays)</li> </ul> | <ul style="list-style-type: none"> <li>• Newsletters</li> <li>• Web sites</li> <li>• Other 1 (Web-based educational materials)</li> <li>• Other 2 (Magazine and newspaper articles)</li> </ul> |
|---|--|

**3. Description of targeted audience**

Agricultural producers, youths, policymakers/regulators, crop and livestock consultants. Growing industry based on bioprocessing and bioconversion, including the existing ethanol and biofuels industry. International grain processors; industrial products manufacturers: adhesives, composites, bio-based chemicals, solvents, and lubricants. Entrepreneurs and investors seeking to enter this industry.

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

**1. Standard output measures**

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	5000	0	1000	0
2012	5000	0	1000	0
2013	5000	0	1000	0
2014	5000	0	1000	0
2015	5000	0	1000	0

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

**2011:1                      2012:0                      2013:1                      2014:0                      2015:1**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2011	12	16	0
2012	12	16	0
2013	12	16	0
2014	12	16	0
2015	12	16	0

## V(H). State Defined Outputs

### 1. Output Target

- Number of educational programs delivered

**2011:30**

**2012:30**

**2013:30**

**2014:30**

**2015:30**

- Number participating in educational programs

**2011:800**

**2012:800**

**2013:800**

**2014:800**

**2015:800**

- Number of refereed research publications

**2011:4**

**2012:4**

**2013:5**

**2014:5**

**2015:5**

**V(I). State Defined Outcome**

O. No.	Outcome Name
1	Number of producers adopting BMPs that protect environmental quality
2	Number of acres of BMP adoption for atrazine and soil erosion
3	Measurable improvement in water quality (percent reduction atrazine) in Little Arkansas River Watershed

**Outcome # 1**

**1. Outcome Target**

Number of producers adopting BMPs that protect environmental quality

**2. Outcome Type : Change in Action Outcome Measure**

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

**3. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 141 - Air Resource Protection and Management

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 2**

**1. Outcome Target**

Number of acres of BMP adoption for atrazine and soil erosion

**2. Outcome Type : Change in Action Outcome Measure**

**2011:12000                      2012:15000                      2013:15000                      2014:17000                      2015:17000**

**3. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 141 - Air Resource Protection and Management

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 3**

**1. Outcome Target**

Measurable improvement in water quality (percent reduction atrazine) in Little Arkansas River Watershed

**2. Outcome Type : Change in Knowledge Outcome Measure**

2011:25

2012:25

2013:25

2014:25

2015:25

**3. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

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

**1. External Factors which may affect Outcomes**

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

**Description**

From past experience, any or all of these factors can significantly impact outcomes of this planned program.

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

**1. Evaluation Studies Planned**

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

**Description**

A combination of the planned studies will provide the most useful and comprehensive results.

**2. Data Collection Methods**

- Sampling
- Observation

**Description**

Selected methods are self-explanatory.



**V(A). Planned Program (Summary)****Program # 4****1. Name of the Planned Program**

Childhood Obesity, Healthy Eating and Physical Activity through the Lifespan

**2. Brief summary about Planned Program**

Concern about childhood obesity, healthy eating, and ensuring an abundant food supply continues to guide K-State Research and Extension (KSRE) to develop programs that: Improve access to high quality foods (including local foods), especially for consumers with limited resources; and promote healthy eating in children, youth, and adults.

**3. Program existence :** New (One year or less)**4. Program duration :** Medium Term (One to five years)**5. Expending formula funds or state-matching funds :** Yes**6. Expending other than formula funds or state-matching funds :** No**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
702	Requirements and Function of Nutrients and Other Food Components	5%		35%	
703	Nutrition Education and Behavior	70%		55%	
724	Healthy Lifestyle	20%		0%	
802	Human Development and Family Well-Being	5%		10%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)****1. Situation and priorities**

The New England Journal of Medicine published an article in (March 2005) stated that the prevalence and severity of obesity is so great, especially in children, that the associated diseases and complications - Type 2 diabetes, heart disease, kidney failure, cancer - are likely to strike people at younger and younger ages. Some researchers suggest that the current generation of children in the U.S. may have shorter life expectancies than their parents, if the escalating childhood obesity epidemic goes unchecked.

The 2003 National Survey of Children's Health found that 16% of Kansas children were overweight and 14% of Kansas children were obese. Kansas data have shown an increase in the percentage of children who are overweight or obese. Kansas children living in poverty (15.2%) are more likely to be overweight or obese. Research shows that overweight and obesity can lead to increased risk of developing chronic diseases and psychosocial problems. Many factors have been linked to the increase in obesity, including increasing portion sizes; eating out more often; increased consumption of sugar-sweetened drinks; increasing television, computer, electronic gaming time; and fear of crime, which prevents outdoor exercise. While a wide variety of food choices are available to most Kansans, the nutrient density of many available foods is lacking. Behavioral and environmental factors are large contributors to overweight and obesity and provide the greatest opportunity for actions and interventions designed for prevention and treatment. Consequently, there has been a greater recognition of the importance of nutrition education. School-based physical activity and nutrition initiatives can reach a large and diverse number of Kansas children. Efforts to change or improve the school environment to make healthy food options available and to limit or restrict foods of minimal nutrition value are realistic and effective measures.

Nutrition and physical activity have been identified as 2 of 6 critical types of adolescent behavior that contribute to the leading causes of death and disability in the U.S. for this population. In 2007, over 78% of high school students reported not eating fruits and vegetables five or more times daily and 65% did not participate in at least 60 minutes of physical activity per day. These statistics help explain why the national childhood obesity rates have increased from 5.0 percent to 17.4 percent for youth ages 12 to 19 within the past three decades. In Kansas, 11% of high school students were classified as obese, 79% ate fruits and vegetables less than five times per day, and 55% did not meet recommended levels of physical activity.

Other factors that have been linked to the increase in obesity include increasing portion sizes; eating out more often; increased consumption of sugar-sweetened drinks; increased screen time; and fear of crime, which prevents outdoor exercise. Behavioral and environmental factors are large contributors to overweight and obesity and provide the greatest opportunity for actions and interventions designed for prevention and treatment.

**2. Scope of the Program**

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

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

**1. Assumptions made for the Program**

Most chronic diseases can be prevented through better lifestyle choices which will also lower health care costs.

**2. Ultimate goal(s) of this Program**

Promote Healthy Eating in Children, Youth, and Adults  
 Create Opportunities and Support People in Kansas to Improve Their Physical, Mental, and Emotional Health and Well-Being

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

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

Year	Extension		Research	
	1862	1890	1862	1890
2011	56.0	0.0	5.0	0.0
2012	56.0	0.0	5.0	0.0
2013	56.0	0.0	5.0	0.0
2014	56.0	0.0	5.0	0.0
2015	56.0	0.0	5.0	0.0

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

**1. Activity for the Program**

Educational programs about making healthy food choices and increasing physical activity  
 Agents involved in school wellness committees

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

**Extension**

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> <li>● Other 1 (white papers; OpEd articles)</li> </ul>

**3. Description of targeted audience**

\* Families and individuals of all ages living in Kansas, including populations with limited resources; low literacy skills; varying ethnicities; disabilities, diseases, or impairments; and documented or identifiable health disparities; \* Economic stakeholders, and policy and funding agencies; \* Health care, education, and nutrition professionals; KSRE faculty and staff with responsibilities for food and/or nutrition; \* Consumer groups (i.e., STOP)

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

**1. Standard output measures**

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	500	0	500	0
2012	500	0	500	0
2013	500	0	500	0
2014	500	0	500	0
2015	500	0	500	0

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

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

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2011	5	1	6
2012	5	1	6
2013	5	1	6
2014	5	1	6

<b>Year</b>	<b>Research Target</b>	<b>Extension Target</b>	<b>Total</b>
2015	5	1	6

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

**1. Output Target**

- Number of extension agents involved in school wellness committees

**2011:20                      2012:20                      2013:30                      2014:30                      2015:30**

- Number of workshop series conducted

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

**V(I). State Defined Outcome**

O. No.	Outcome Name
1	Number of people who develop a plan to increase physical activity
2	Number of youths who increase fruit and vegetable consumption
3	Increased percentage of adolescents reporting healthier lifestyle habits (e.g., eating meals from a variety of food groups; increased frequency and/or time spent participating in physical activity per day)
4	Number of school-aged youth who become more physically active (i.e., 60 minutes of moderate activity each day) and decrease screen time (e.g., tv, computer, video games) to less than 2 hours each day

**Outcome # 1**

**1. Outcome Target**

Number of people who develop a plan to increase physical activity

**2. Outcome Type : Change in Knowledge Outcome Measure**

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

**3. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle
- 802 - Human Development and Family Well-Being

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 2**

**1. Outcome Target**

Number of youths who increase fruit and vegetable consumption

**2. Outcome Type : Change in Action Outcome Measure**

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

**3. Associated Knowledge Area(s)**

- 702 - Requirements and Function of Nutrients and Other Food Components
- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle
- 802 - Human Development and Family Well-Being

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 3**

**1. Outcome Target**

Increased percentage of adolescents reporting healthier lifestyle habits (e.g., eating meals from a variety of food groups; increased frequency and/or time spent participating in physical activity per day)

**2. Outcome Type : Change in Action Outcome Measure**

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

**3. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle
- 802 - Human Development and Family Well-Being

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 4**

**1. Outcome Target**

Number of school-aged youth who become more physically active (i.e., 60 minutes of moderate activity each day) and decrease screen time (e.g., tv, computer, video games) to less than 2 hours each day

**2. Outcome Type : Change in Action Outcome Measure**

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

**3. Associated Knowledge Area(s)**

- 724 - Healthy Lifestyle
- 802 - Human Development and Family Well-Being

**4. Associated Institute Type(s)**

- 1862 Extension

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

**1. External Factors which may affect Outcomes**

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

**Description**

{NO DATA ENTERED}

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

**1. Evaluation Studies Planned**

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

**Description**

The Office of Educational Innovation and Evaluation will advise and provide evaluation training to KSRE faculty.

**2. Data Collection Methods**

- Observation
- Journals

**Description**

{NO DATA ENTERED}



**V(A). Planned Program (Summary)****Program # 5****1. Name of the Planned Program**

Healthy Communities: Youth, Adults and Families

**2. Brief summary about Planned Program**

Through K-State Research and Extension's multiple approaches &ndash including basic and applied research and research-informed strategies &ndash to promote healthy communities &ndash programs will be developed to: Improve life-long money management skills to create financial security; build harmonious relationships to create resilient families; help children and youth develop competence, confidence, character, compassion, and a sense of belonging (connectedness); engage youth in science to improve life for a sustainable world; assist people to live and thrive in their homes as long as possible; grow communities' capacity to identify and meet local needs; improve participation of children, youths, and adults in the life of the community; enhance community leadership and entrepreneurship; help residents, organizations, and communities identify opportunities for partnerships; partner with communities to facilitate preparation for, response to, and recovery from emergencies and disasters; build capacity of people to optimize their personal health and well-being and to avoid or manage chronic health conditions; empower individuals and families to adapt to changes associated with the aging process; and connect individuals and families to mental and emotional support systems and resources.

**3. Program existence** : Mature (More than five years)**4. Program duration** : Long-Term (More than five years)**5. Expending formula funds or state-matching funds** : Yes**6. Expending other than formula funds or state-matching funds** : No**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
724	Healthy Lifestyle	20%		10%	
801	Individual and Family Resource Management	10%		15%	
802	Human Development and Family Well-Being	15%		20%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	15%		15%	
806	Youth Development	40%		10%	
903	Communication, Education, and Information Delivery	0%		30%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)****1. Situation and priorities**

Kansans have not been immune to trends that affect children, youths, and families throughout the nation. Adult obesity rates in Kansas have increased almost 70%. Many health problems such as obesity, diabetes, hypertension, stroke, heart disease, certain cancers, respiratory disorders, and osteoporosis are influenced by poor dietary habits and inactivity.

Most Kansas youth are healthy, connected to their families, schools, and communities; and are on the path to becoming contributing and caring adults. However, there are areas of concern in Kansas (e.g., 15% of children between 6th and 12

grades report binge drinking; an increasing number of youth attempt suicide each year; nearly 10,000 military-connected youths experience the transitions associated with multiple deployments; 16% of our children are overweight, 11% do not get enough exercise; and increasing numbers are not completing high school). Most experts agree that the goals of positive youth development are the "5 Cs" (competence, confidence, character, compassion, and connection/sense of belonging).

The United States is falling dangerously behind other nations in developing its future workforce of scientists, engineers, and technology experts. America now faces a future of intense global competition with a startling shortage of scientists. Only 18% of U.S. high school seniors are proficient in science. A mere 5% of current U.S. college graduates earn science, engineering, or technology degrees compared to 66% in Japan and 59% in China. To ensure global competitiveness, we must act now to prepare the next generation of science, engineering, and technology leaders.

Too many individuals and families are experiencing financial crisis because of inadequate savings, too much debt, and poor planning for potential major life events. On average, U.S. households carry about \$8,000 in credit card debt, up two-thirds compared to a decade ago. More than half of Americans report living paycheck to paycheck. During the past decade, the rate of personal bankruptcy in the U.S. rose by 69%. Extension targets programs for youth, financially vulnerable populations, and consumers making financial decisions through their lifetime. The overall goal is for people to acquire the knowledge, skills, behavior changes and motivation to build financial security, which is the cornerstone of prosperous communities, nurturing neighborhoods, and strong families.

The U.S. and Kansas are growing older. Currently 13% of Kansans are age 65+ and that number is expected to increase to 20.2% by 2030. Kansas counties are of particular interest, as 14 reflect an older population that is approximately double that of the nation's average. Changes to meet the demands of this aging demographic are expected in education, health and wellness, health care, family relationships, work and home environments, agriculture, community life, politics, and the economy.

Communities consistently deal with a host of issues that demand leadership in the midst of increasing complexity. They are struggling to maintain competitive advantage in a rapidly changing global economic context. These communities need assistance to identify strategies to address the rapidly changing social, environmental, human, and economic landscape.

**2. Scope of the Program**

- In-State Extension

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

**1. Assumptions made for the Program**

- Today's complex issues and problems require new perspectives and skills.
- Community policies and practices that are informed by research can make it easier for people to create healthy social, economic, and physical environments.

**2. Ultimate goal(s) of this Program**

People in Kansas are prepared to thrive in a global society and all aspects of life; communities are sustainable and resilient to the uncertainties of economics, weather, health, and security; and people in Kansas have opportunities and support to improve their physical, mental, and emotional health and well-being.

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

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

Year	Extension		Research	
	1862	1890	1862	1890
2011	150.0	0.0	19.0	0.0
2012	150.0	0.0	19.0	0.0
2013	150.0	0.0	19.0	0.0

Year	Extension		Research	
	1862	1890	1862	1890
2014	150.0	0.0	19.0	0.0
2015	150.0	0.0	19.0	0.0

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

**1. Activity for the Program**

- Develop/identify theory- and evidence-based educational programs to promote healthy communities: youth, adults, and families.
- Disseminate, implement, and evaluate effectiveness of programs to promote healthy communities: youth, adults, and families.
- Strengthen collaborative capacity within K-State Research and Extension and among communities/ organizations to promote healthy communities: youth, adults, and families.
- Provide technical assistance and educational programs to citizens seeking to make their communities healthy and sustainable places for meeting human needs.
- Establish links between community development researchers and practitioners for cooperative efforts that result in healthy, sustainable communities.
- Provide experiential learning opportunities for children and youth to address key and emerging issues that affect their growth and development.
- Deliver and evaluate evidence-based community-development strategies for positive youth development in structured out-of-school settings (e.g., after-school programs, youth-serving organizations, clubs).
- Strengthen the support for a volunteer development system through training and education on the experiential learning model, 4-H essential elements, ISOTURE model, age appropriate learning experiences and emerging aspects of youth development.
- Provide imaginative, motivational, and experiential learning experiences to help youth build competencies and master life skills.

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

**Extension**

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>• Education Class</li> <li>• Workshop</li> <li>• Group Discussion</li> <li>• One-on-One Intervention</li> <li>• Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>• Public Service Announcement</li> <li>• Newsletters</li> <li>• TV Media Programs</li> <li>• Web sites</li> <li>• Other 1 (Electronic media (e.g., blogs))</li> <li>• Other 2 (Electronic media (e.g., radio))</li> </ul>

**3. Description of targeted audience**

- Families and individuals of all ages living in Kansas, including populations with limited resources; low literacy skills; varying ethnicities; disabilities, diseases, or impairments; and documented or identifiable health disparities
- Economic stakeholders, and policy and funding agencies
- Health care and education professionals
- K-State Research & Extension faculty and staff with responsibilities for healthy communities: youth, adults, and families

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

**1. Standard output measures**

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	20000	60000	12500	40000
2012	22500	70000	13000	50000
2013	25000	80000	13000	50000
2014	27500	90000	14000	60000
2015	30000	100000	15000	60000

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

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

**3. Expected Peer Review Publications**

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

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

**1. Output Target**

- Number of educational programs delivered to increase knowledge of healthy communities: youth, adults, and families  

<b>2011:1000</b>	<b>2012:1000</b>	<b>2013:1000</b>	<b>2014:1000</b>	<b>2015:1000</b>
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- Number of program participants  

<b>2011:30000</b>	<b>2012:35000</b>	<b>2013:35000</b>	<b>2014:40000</b>	<b>2015:40000</b>
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- Number of educational programs to increase knowledge of volunteer development, ISOTURE, experiential learning and youth development competencies  

<b>2011:30</b>	<b>2012:35</b>	<b>2013:35</b>	<b>2014:35</b>	<b>2015:40</b>
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- Number of communities that participate in community capacity building trainings and activities led through Extension.  

<b>2011:60</b>	<b>2012:70</b>	<b>2013:80</b>	<b>2014:90</b>	<b>2015:100</b>
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**V(I). State Defined Outcome**

O. No.	Outcome Name
1	Increase 5% of adult and youth participants who meet the USHHS goals for physical activity
2	Number of substantial community projects that reflect shared participation in addressing community goals
3	Number of volunteer hours of community members engaged in community improvement programs
4	Number of volunteers, faculty, and staff who understand and demonstrate effective youth development principles in service to youth (e.g., 5 Cs of positive youth outcomes, essential elements to positive learning environments)
5	Number of youths who improve: (a) Competence - believe they are capable and successful; that they have mastery. (b) Confidence - know they influence the world around them (i.e., people and events); that they have independence. (c) Connection - know they are cared about; that they belong. (d) Character and Caring - Youths practice helping others; they are generous.
6	Increased number of participants who have established financial goals to guide financial decisions toward financial security

**Outcome # 1**

**1. Outcome Target**

Increase 5% of adult and youth participants who meet the USHHS goals for physical activity

**2. Outcome Type :** Change in Action Outcome Measure

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

**3. Associated Knowledge Area(s)**

- 724 - Healthy Lifestyle

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Number of substantial community projects that reflect shared participation in addressing community goals

**2. Outcome Type :** Change in Action Outcome Measure

**2011:750                      2012:800                      2013:800                      2014:800                      2015:900**

**3. Associated Knowledge Area(s)**

- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Number of volunteer hours of community members engaged in community improvement programs

**2. Outcome Type :** Change in Action Outcome Measure

**2011:80000                      2012:80000                      2013:90000                      2014:100000                      2015:120000**

**3. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 4**

**1. Outcome Target**

Number of volunteers, faculty, and staff who understand and demonstrate effective youth development principles in service to youth (e.g., 5 Cs of positive youth outcomes, essential elements to positive learning environments)

**2. Outcome Type : Change in Action Outcome Measure**

**2011:4000                      2012:4500                      2013:4500                      2014:5000                      2015:5000**

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 5**

**1. Outcome Target**

Number of youths who improve:

- (a) Competence - believe they are capable and successful; that they have mastery.
- (b) Confidence - know they influence the world around them (i.e., people and events); that they have independence.
- (c) Connection - know they are cared about; that they belong.
- (d) Character and Caring - Youths practice helping others; they are generous.

**2. Outcome Type : Change in Action Outcome Measure**

**2011:550                      2012:550                      2013:600                      2014:600                      2015:600**

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 6**

**1. Outcome Target**

Increased number of participants who have established financial goals to guide financial decisions toward financial security

**2. Outcome Type : Change in Action Outcome Measure**

**2011:100                      2012:125                      2013:125                      2014:150                      2015:150**

**3. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management



#### **4. Associated Institute Type(s)**

- 1862 Extension

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

##### **1. External Factors which may affect Outcomes**

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

##### **Description**

{NO DATA ENTERED}

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

##### **1. Evaluation Studies Planned**

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

##### **Description**

An evaluation consultant worked with program focus teams at our Spring Action Conference. These teams will begin building evaluation into their Action Plans.

##### **2. Data Collection Methods**

- Sampling
- Observation
- Other ()

##### **Description**

Enrollment in programs and participant feedback/evaluations