

# 2016 Colorado State University Combined Research and Extension Annual Report of Accomplishments and Results

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## I. Report Overview

### 1. Executive Summary

The Agricultural Experiment Station (AES) and Extension at Colorado State University are committed to excellence in basic and applied research and translation of this research through Extension programs to crop (including ornamental) and animal (including equine) agriculture. Extension will continue to emphasize non-formal education and transfer of knowledge to audiences throughout the state, based on research information from the AES, the colleges of Agricultural Sciences, Health & Human Sciences, Engineering, Veterinary Medicine and Natural Resources. Programs will emphasize best management practices in addressing issues that affect Coloradans.

#### **4-H Youth Development**

Program Goals: 4-H Youth Development empowers youth to reach their full potential by working and learning in partnership with caring adults. 4-H affects positive change in life skills (including leadership, citizenship, decision making, and communication) and in STEM (including interest, knowledge, and application of science process skills) for youth ages 5 to 18.

Extension, AES, or Integrated: Extension

New Programs, and/or Addressing NIFA Priorities: STEM priority will benefit from available and promised content and resource support from National 4-H Headquarters, Colorado State University, Extension, and county partners.

Ongoing, Consistent, and/or Successful Programs: Colorado State University Extension reaches Colorado's K-12 youth through 4-H youth development programs in 4-H clubs, after-school and school enrichment. Development of volunteers who provide much of the leadership for 4-H, and private fund-raising are associated activities. 4-H Youth Development emphasizes personal growth of young people through experiential learning with well-designed curricula and projects.

Crosscutting or Cross-disciplinary Initiatives: Most 4-H Youth Development programs, while focusing on youth development, are built around content that may be supported by one or more college-based specialists.

#### **Community Development**

Program Goals: Community Development outreach works with municipal, county, state, and federal agencies, nongovernmental organizations, and citizens to create dynamic processes that address local and regional needs/issues. Our efforts focus on facilitating community planning processes that engage all stakeholders affected by an issue in ways that lead to better-informed decisions and help communities understand and deal with change. It includes providing information and resource connections, which might include community impact analysis of economic activity or evaluation of the drivers of local economies. This work encourages collaboration to build regional economies and create entrepreneur/business friendly communities. Innovative and collaborative leadership activities/trainings are provided to engage new diverse leaders and strengthen community organizations.

Extension, AES, or Integrated: Integrated

New Programs, and/or Addressing NIFA Priorities: Community Development, is highlighted by the Vice President for Engagement and Director of Extension.

Ongoing, Consistent, and/or Successful Programs: Colorado communities are changing rapidly as a result of many factors, including loss of agricultural water, influx of retirement populations, development of gas and oil industries, incidence of military deployment, and changes in cultural composition of residents.

Communities struggle to develop and maintain resources: human, financial, physical, social, environmental, and political. They also are challenged to provide the organizational capacity to assess, plan, and implement activities to address resource development and management. These issues especially are acute in smaller rural communities. Colorado's rural communities are relatively unique in terms of sparse populations, a high natural amenity and public lands base, a transitory population, and

relatively low public service provision. Communities require knowledge to evaluate their resource base, their economic and social service alternatives, and their futures.

Crosscutting or Cross-disciplinary Initiatives: Technologies will be provided through training and technical assistance to Extension agents, as the system views C&ED as a process rather than an issue. The goal is intentionally to integrate C&ED into all issues work.

### **Crop Management Systems**

Program Goals: It is the goal of this Planning & Reporting Unit (PRU) for the producers of Colorado crops to adopt and implement improved, productive, and sustainable agricultural systems that will lead to the success of farms. Furthermore, these producer actions will improve the ability of farm operations to persist and thrive through successive generations of operators. Individuals, families, and communities will all benefit by having a safe, secure and sufficient food supply. Colorado crop producers will accommodate to the growth of demand for local and world crop production without compromising the natural resources upon which agriculture depends.

Extension, AES, or Integrated: Integrated

New Programs, and/or Addressing NIFA Priorities: Global Food Security and Hunger

Ongoing, Consistent, and/or Successful Programs: Molecular biology and genomics of crop plants and their pests; Integrated Pest Management.; Wheat breeding, bean breeding and potato breeding programs; Production systems in semi-arid environments with limited water availability. Communicate results through demonstration plots and field days;

Crosscutting or Cross-disciplinary Initiatives: This is a well-organized and highly functioning Extension unit that will maintain its structure and contribute to the NIFA priority goal of global food security.

### **Energy**

Program Goals: (1) Empower Coloradans to make well-informed energy decisions; and (2) Promote a broad, unbiased understanding of energy issues. Promoting a broad, unbiased understanding of energy issues may result in well-informed energy decisions in the long-term. In the short-term, it may simply uplift the quality of energy dialogue in Colorado.

Extension, AES, or Integrated: Integrated

New Programs, and/or Addressing NIFA Priorities: Clean Energy

Ongoing, Consistent, and/or Successful Programs: Energy Masters, Center for Agricultural Energy (CAE)

Crosscutting or Cross-disciplinary Initiatives: Home & Farm, K-12

### **Environmental Horticulture**

Program Goals: The outreach efforts of the Environmental Horticulture Planning & Reporting Unit (PRU) will provide education and services to encourage the adoption of research-based best management practices (design, plant selection, establishment, and management practices) and diagnostic techniques/services by green industry professionals and the home gardener. Our goal is that professional and lay practitioners will use reasonable inputs of labor, water, fertilizers and pesticides to produce attractive, functional, cost-effective and sustainable ornamental landscapes.

Extension, AES, or Integrated: Integrated

Ongoing, Consistent, and/or Successful Programs: The primary issues addressed by Environmental Horticulture Extension include: ornamental landscapes, diagnostic services, and volunteer engagement.

Emerging issues for consideration include

- Sustainable landscaping
- "Green" gardening

- Organic/natural landscape management
- Composting/recycling
- Water-wise/water smart gardens
- Youth Gardening
- Wildlife gardening (birds, butterflies)
- Home greenhouses
- Spanish speaking audiences

Crosscutting or Cross-disciplinary Initiatives: Adult and youth audiences.

### **Family & Financial Stability**

Program Goals: Financial, mental, physical, emotional and relational health are key components of

well-being. Stable and successful individuals, families, and communities are important to the growth, development and health of our society. When people are in a state of financial and relational wellness, they are in control, confident and focused. They have greater balance and stability so they can concentrate on the most important tasks at hand such as weathering difficulties and making progress toward their goals. Family and financial stability education creates strong communities.

Extension, AES, or Integrated: Extension

New Programs, and/or Addressing NIFA Priorities: Renewed engagement with CSU Department of Human Development and Family Studies provides opportunities for new programs engaging field and campus colleagues.

Ongoing, Consistent, and/or Successful Programs: Family and Financial Stability (FAFS) programs seek to provide applied research and Extension education in a coordinated set of programs related to family and financial economic stability. Financial stability of families has been the area of focus for non-nutrition FCS programming. Colorado families' financial instability includes increasing rates of bankruptcy, economic crises and loss of jobs. Family stability is important to the growth, development, and health of our society.

Crosscutting or Cross-disciplinary Initiatives: Consumer economics and human development and family studies are vehicles that can assist 4-H in reaching positive youth development and STEM targets.

### **Food Systems**

Program Goals: Improved technical assistance for agricultural and food producers exploring new marketing channels and alternative business approaches. In addition, CSU will provide facilitation of community discussions around the interface between food and agricultural issues and broader social issues including public health, food safety, the environment and community development.

Extension, AES, or Integrated: Integrated

New Programs, and/or Addressing NIFA Priorities: This team was formed and issues were framed based on a couple of key assumptions that arose among team members as they saw the requests they received from community members change and evolve:

1. Current work teams do not address all the system-oriented issues that agriculture and food production play a role in.
2. There is a need for more marketing, policy and community development activities directed at food systems that vary from the conventional system used to handle high volume commodity foods.
3. Extension is being asked to play a more significant role in food system planning, including facilitating discussions between consumers, producers and organizations interested in ag and food issues.

Ongoing, Consistent, and/or Successful Programs: The Food Systems team has come together, drawing from a diverse set of personnel with backgrounds in agriculture, horticulture, food safety, nutrition, community development, and youth education. This team will work to increase literacy on food and ag issues, facilitate community discussions and assessments on ag and food issues, provide technical assistance to an increasingly diverse set of food producers and support new market opportunities.

Crosscutting or Cross-disciplinary Initiatives: To formalize and coordinate activities that require interdisciplinary approaches related to emerging issues, a new resource team on Food Systems seems warranted.

## **Livestock & Range**

**Program Goals:** The Livestock and Range (L&R) Planning & Reporting Unit (PRU) strives for rangeland health, improved animal health and production, industry policy and regulation awareness, and economic sustainability using a broad array of methodologies that provides information, skills, and technology to producers and L&R Unit members. This PRU is designed for Extension Programming for livestock producers, ranchers, and rangeland managers who have, or are striving for, a significant portion of their personal income coming from the farm/ranch. These may be small farms/ranches or larger scale operations. Livestock producers may also integrate cropping production systems into their operation.

Extension, AES, or Integrated: Integrated

New Programs, and/or Addressing NIFA Priorities; Global Food Security and Hunger

Ongoing, Consistent, and/or Successful Programs: Extension outreach will span the breadth of the topics of research to assure that industry participants have practical knowledge in modern beef, dairy, and sheep production systems, biosecurity, economic and risk management, and response to policy and consumer changes. Outreach to youth involved in livestock production and judging events will continue as part of experiential learning in 4-H, FFA, and college judging. Producers will realize increased prices and

lower cost of production. Consumers will benefit from higher human nutritional values of food. AES will lead research on animal production systems and reproductive efficiency.

**Crosscutting or Cross-disciplinary Initiatives:** Reorganization of Planned Programs pulls apart animal production systems and plant production systems. The work will integrate Extension education in disseminating research results. CSU Extension will:

- Deliver workshops and educational classes for producers;
- Provide individual counseling for producers and clientele on specific animal production problems.

**Cross-cutting or Cross-disciplinary Initiatives:** Research on animal production systems and reproductive efficiency.

## **Natural Resources**

**Program Goals:** The Natural Resources Planning & Reporting Unit (PRU) members will work together to develop and implement high quality educational programs and tools to ensure a high quality of life for Colorado citizens.

Extension, AES, or Integrated: Integrated

New Programs, and/or Addressing NIFA Priorities: The Natural Resources PRU is focused on how best to manage our landscapes from the perspective of plants, animals, soils, water, and pests. Our goal is to protect these resources through our programming efforts, with special emphasis on native species.

Ongoing, Consistent, and/or Successful Programs: AES and Extension programs address the growing competition for finite water, land, and air resources in a state with a growing human population by:

- Educating agricultural and resource industry professionals;
- Researching technical and economic issues related to improved resource utilization;
- Enhancing international competitiveness.

**Crosscutting or Cross-disciplinary Initiatives:** Nutrient management and odor and dust control.

## **Nutrition, Food Safety & Health**

**Program Goals:** The goal of this PRU is to promote adoption of healthful eating and activity patterns and ensure an abundant and safe food supply for all. Adoption of healthful eating and activity patterns can enhance the overall health and wellbeing of children, youth, adults, and the growing senior population. Adoption of food safety knowledge and safe food handling practices will ultimately reduce the incidence of foodborne disease in Colorado, especially among the most vulnerable populations (infants, young children and individuals who are immuno-compromised through aging, medical intervention, and illness). Through various programs, CSU Extension contributes to the statewide efforts to increase fruit and vegetable consumption, increase physical activity, and decrease overweight/obesity risk in Colorado.

Extension, AES, or Integrated: Integrated

New Programs, and/or Addressing NIFA Priorities: Planned Programs are reorganized to again combine Nutrition and Food Safety work in this category.

Ongoing, Consistent, and/or Successful Programs:

- Food safety training for food service managers and employees
- Food safety education for high-risk audiences, their caregivers, and health care professionals
- Food safety information for consumers including Farmers' Market vendors and their customers.
- Nutrition and Health Promotion programs provide research-based nutrition and health education to a variety of audiences across Colorado in an effort to promote healthful nutrition, activity and lifestyle behaviors.

Cross-cutting or Cross-disciplinary Initiatives: AES food safety research emphasizes pre-harvest management of livestock to prevent transmission of human pathogens in livestock production and handling and post-harvest detection and management systems to prevent contamination of meat and plant products with human pathogens.

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

Year: 2016	Extension		Research	
	1862	1890	1862	1890
Plan	150.0	0.0	50.0	0.0
Actual	168.0	0.0	50.1	0.0

**II. Merit Review Process**

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

- Internal University Panel
- External Non-University Panel
- Combined External and Internal University External Non-University Panel

**2. Brief Explanation**

All projects conducted by the AES and Extension are subjected to a peer review process. Each college at Colorado State University has adopted a process for conducting a peer review on all AES and Extension projects submitted for support by state and federal funds. Criteria, as requested by NIFA reviewers, include alignment with college priorities, resource allocation, and meeting needs of Coloradoans.

As of January 2014, Extension specialists and agents team together in ten Planning and Reporting Units (PRUs), jointly lead by a specialist and an agent. Each PRU has completed a Logic Model, including providing a situation statement, assumptions, identification of inputs, outputs and outcomes (including learning, action, and condition), and an evaluation plan. The Plans of Work (POW) were revised during fall, 2014, and submitted for entry into the online Colorado Planning and Reporting System (CPRS) early in 2015 for a two-year period. Last fall the PRUs met to confirm, update, or revise their POWs. 2017 -2018 POWs are now available as resources for agents' individual Plans to Invest (PTIs).

At the county level, all county Extension programs are required at a minimum to have an Extension Advisory Committee composed of constituents, partner agencies (such as the school districts, councils on aging, county health and human services, commodity groups, etc.). In addition, many counties have multiple program advisory groups that guide the county staff in identification of specific programs of emphasis. In the most recent survey of these committees, 62 Extension county programs (in 54 county offices) had 112 advisory committees involving close to 2,000 individuals in the program review process. County programs are reviewed and evaluated by these county advisory groups. The primary criteria is

meeting needs in the county.

### **III. Stakeholder Input**

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

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey of the general public
- Survey specifically with non-traditional groups
- Survey specifically with non-traditional individuals
- Survey of selected individuals from the general public
- Other (Survey of County Commissioners regarding Extension Programs in their county.)

#### **Brief explanation.**

The AES and Extension are active participants in meetings of Advisory Committees consisting of state, county, and organizational leaders. AES and Extension programs are discussed and input is solicited on future priorities for research activities. In addition, the AES regularly participates in meetings held by CSU Extension where current and future program needs are discussed. A variety of joint research programs are conducted with USDA-ARS programs in Fort Collins, Akron, and other locations as well as collaborative programs with USDA-FS, USDA-NRCS and USDA-NASS. Numerous programs are also conducted in cooperation with individuals.

Regional listening sessions lead by the AES and Extension are held in the various regions of the state. Both AES and Extension programs are modified to reflect the input received where appropriate and feasible.

All sessions are open to the public and advertised in the local media prior to the meeting.

Critical issues addressed by multi-state and integrated activities include the following: 1) invasive plants; 2) obesity; 3) animal and municipal waste management; 4) food safety; 5) community development; 6) water quality and environmental issues; and the emerging area of bioenergy.

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

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

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

- Other (Council for Agricultural Research, Extension, and Teaching)

**Brief explanation.**

For CSU Extension, county needs determine programming direction. These include addressing the needs of under-served and under-represented populations. Extension participated in the first cohort of CSREES-funded Change Agents States. We have maintained the system changes implemented during the initiative, as well as the Diversity Catalyst Team (DCT). Goals for Extension diversity include increasing: diversity of employees; diversity of audiences served; and cultural competency of current Extension employees. DCT seeks to support "widening our circle" to include audiences currently under-served and/or under-represented.

The AES research program is modified based on input from stakeholders. Examples include an evaluation of oilseeds that was initiated to assess bioenergy potential based on stakeholder requests; multi-disciplinary and integrated activities are conducted on invasive plants; and the goals of wheat and potato breeding programs that reflect the needs of the wheat and potato industry. In essence, ongoing interaction with stakeholders through formal and informal means is used to insure program relevancy.

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

**1. Methods for collecting Stakeholder Input**

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting specifically with non-traditional groups
- Meeting specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public
- Survey of selected individuals from the general public
- Other (Review of county Web sites to discern priorities)

**Brief explanation.**

The AES and Extension annually utilize multiple means of obtaining stakeholder input on programs conducted and solicit input on changes in program direction. The AES and Extension support programs in seven of the eight colleges on the Colorado State University campus as well as at nine off-campus research centers, 52 individual county offices and four area programs serving 62 of Colorado's 64 counties.

AES: Each year, the off-campus research centers hold a public meeting where research results are presented and proposed programs are discussed. Public input is solicited on all proposed programs. It should be noted that many of the programs discussed involve faculty and staff located on the Fort Collins campus as well as at the off-campus research centers and Extension county or area offices.

CE: Each County/Area Extension program is required to have a stakeholder advisory committee, representing all programmatic and geographic areas, as well as the diversity found in the county. Evidence of the advisory committee must be documented in performance appraisals, as well as during the regularly scheduled affirmative action reviews. These advisory committees are expected to meet on a regular basis and provide guidance on programming and target audiences. Finally, a Colorado Extension Advisory Committee (CEAC), representing program recipient groups

and programmatic collaborators provides oversight and input at the state level. Extension administration pays travel expenses to two meetings each year, to encourage participation.

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

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

#### **Brief explanation.**

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AES: Each year, the off-campus research centers hold a public meeting where research results are presented and proposed programs are discussed. Public input is solicited on all proposed programs. It should be noted that many of the programs discussed involve faculty and staff located on the Fort Collins campus as well as at the off-campus research centers and Extension county or area offices.

CE: Yearly the county advisory committees review the county plans of work which are then incorporated into the statewide work team plans. These plans are reviewed by the CEAC for additional input and acceptance. There is an open call for additional Planning & Reporting Units (PRUs) so that emerging priority areas may be identified and statewide focus provided, when appropriate. Diversity among stakeholders is expected, but as NIFA reviewers have noted, it is not documented.

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

Local demand drives programming in Colorado. Extension no longer operates under an "expert" model, where specialists tell county educators what to do. Resources of the University are available to county offices according to local demand. Ten Planning and Reporting Units (PRUs) organize and coordinate program needs according to local demand.

**IV. Expenditure Summary**

<b>1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)</b>			
<b>Extension</b>		<b>Research</b>	
<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
3240737	0	3539201	0

<b>2. Totaled Actual dollars from Planned Programs Inputs</b>				
	<b>Extension</b>		<b>Research</b>	
	<b>Smith-Lever 3b &amp; 3c</b>	<b>1890 Extension</b>	<b>Hatch</b>	<b>Evans-Allen</b>
<b>Actual Formula</b>	3304423	0	3221594	0
<b>Actual Matching</b>	3304423	0	3221594	0
<b>Actual All Other</b>	10818962	0	39086262	0
<b>Total Actual Expended</b>	17427808	0	45529450	0

<b>3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous</b>				
<b>Carryover</b>	2523581	0	1378926	0

## V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	4-H Youth Development
2	Family and Financial Security
3	Nutrition, Food Safety & Health
4	Livestock & Range
5	Cropping Systems
6	Natural Resources
7	Community Development
8	Energy
9	Environmental Horticulture
10	Food Systems

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

**Program # 1**

**1. Name of the Planned Program**

4-H 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%		0%	
	<b>Total</b>	100%		0%	

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

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

Year: 2016	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	50.0	0.0	0.0	0.0
<b>Actual Paid</b>	65.1	0.0	0.0	0.0
<b>Actual Volunteer</b>	952.0	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
1206258	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1206258	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
3575031	0	0	0

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

**1. Brief description of the Activity**

- Support traditional club programs by recruiting and establishing new clubs;

- Conduct after school and school enrichment programs that provide curriculum in Science, Technology, Engineering and Math (STEM), leadership, citizenship and life skills development;
- Develop new curriculum in response to new audience needs;
- Strengthen the volunteer management system needed to implement the 4-H Youth Development program by: conducting agent trainings to develop volunteer management skills; developing tools to support volunteer management system; delivering volunteer leader training;
- Develop new funding support through individual and group solicitation, grant applications and fee-for-service programs.

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

Youth - 5-19  
 Adult Volunteers 19+

**3. How was eXtension used?**

eXtension was not used in this program

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

**1. Standard output measures**

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	11318	59368	43306	10390

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

**Patent Applications Submitted**

Year: 2016  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2016	Extension	Research	Total
<b>Actual</b>	0	0	0

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

**Output Target**

**Output #1**

**Output Measure**

- 1. Number of group educational events: classes, trainings, workshops, demonstrations, field days, providing content expertise, fairs, shows, booths, other group events.

<b>Year</b>	<b>Actual</b>
2016	11063

**Output #2**

**Output Measure**

- 2. Individual Education: one-on-one direct client contacts by site visit, office drop-in, e-mail, telephone, Ask an eXpert, etc.

<b>Year</b>	<b>Actual</b>
2016	42594

**Output #3**

**Output Measure**

- 3. Number of meetings convened and/or facilitated; includes strategic participation that contributes to program development.

<b>Year</b>	<b>Actual</b>
2016	3858

**Output #4**

**Output Measure**

- 4. Number of kits or similar resources loaned or provided.

<b>Year</b>	<b>Actual</b>
2016	136

**Output #5**

**Output Measure**

- 5. Number of Extension-related research and assessment projects. External funding proposals, including local, state, federal.

<b>Year</b>	<b>Actual</b>
2016	151

**Output #6**

**Output Measure**

- 7. Number of educational media releases: indirect contacts through media releases, appearances, newsletters, blog posts, other non-peer reviewed publications, kit development,

non-peer reviewed curriculum, PowerPoints or videos.

<b>Year</b>	<b>Actual</b>
2016	1605

**Output #7**

**Output Measure**

- 8. Number of online posts: Web posts, hits.

<b>Year</b>	<b>Actual</b>
2016	81847

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	4H 1.1: Volunteers apply skills developed through Extension-provided training, supervision, and support to increase their effectiveness in influencing positive youth development for the audience(s) with which they work.
2	4H 2.1: 4-H Youth Development volunteers develop capacity and have a positive influence on the well-being of their communities. Indicators include: 4H 2.1: Volunteers increase leadership capacity in their communities. 4H 2.2: Volunteers foster life skill development in the youth in their communities. ? Indicator: 4H 2.3: Volunteers increase effectiveness of Extension programs. 4H 2.4: Volunteers contribute to increased public service in their communities. 4H 2.5: Volunteers generate a sense of goodwill and social well-being in their communities. 4H 2.6: Volunteers increase the social, emotional, and learning skills in diverse audiences with which they work.
3	4H 3.0: Youth become caring and contributing members of society through life skill development attained in the 4-H program. Indicators include: 4H 3.1: Youth contribute to community improvement; 4H 3.2: Youth develop goal-setting skills; 4H 3.3: Youth develop decision-making skills; 4H 3.4: Youth develop record keeping skills; 4H 3.5: Youth develop public speaking skills; 4H 3.6: Youth develop leadership skills; 4H 3.7: Youth develop responsibility.
4	4H 4.1: Colorado youth apply STEM knowledge and skills in club, community and academic projects and programs.
5	4H 5.1: Colorado K-12 youth apply content knowledge from 4-H in academic and community settings.
6	4H 6.0: 4-H Youth will become more aware and engaging in their community and community issues through the appreciation of cultural diversity and understanding in the democratic process. Indicators include: 4H 6.1: Youth will read or view news regularly and identify important issues. (8th grade only) 4H 6.2: Youth will engage in discussion with others and be critical consumers of information (8th graders only). 4H 6.3: Youth will demonstrate value and respect for other cultures. 4H 6.4: Youth will engage in civic involvement. 4H 6.5: Youth participate in community service and volunteer. 4H 6.6: Youth will demonstrate leadership efficacy. 4H 6.7: Youth will maintain future intentions for civic engagement. 4H 6.8: Youth demonstrate their ability to work effectively in teams. 4H 6.9: Youth will improve their knowledge of parliamentary procedure. 4H 6.10: Youth will increase their interactions with local, state, and national government. 4H 6.11: Youth will intend to vote.

## **Outcome #1**

### **1. Outcome Measures**

4H 1.1: Volunteers apply skills developed through Extension-provided training, supervision, and support to increase their effectiveness in influencing positive youth development for the audience(s) with which they work.

Not Reporting on this Outcome Measure

## **Outcome #2**

### **1. Outcome Measures**

4H 2.1: 4-H Youth Development volunteers develop capacity and have a positive influence on the well-being of their communities. Indicators include: 4H 2.1: Volunteers increase leadership capacity in their communities. 4H 2.2: Volunteers foster life skill development in the youth in their communities. ? Indicator: 4H 2.3: Volunteers increase effectiveness of Extension programs. 4H 2.4: Volunteers contribute to increased public service in their communities. 4H 2.5: Volunteers generate a sense of goodwill and social well-being in their communities. 4H 2.6: Volunteers increase the social, emotional, and learning skills in diverse audiences with which they work.

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2016	5966

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

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

Volunteers increase the capacity of 4-H to provide positive youth development to youth across the state. Colorado 4-H reported 12, 185 volunteers enrolled (ES237). One study documented volunteers donating about 125 hours in their 4-H roles. CSUE considers 1 day = 8 hours, and 200 days = one FTE. Using this formula, we are reporting 952 FTEs of volunteer support for CSUE 4-H.

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

Volunteers are recruited and trained to serve as a positive influence on the well-being of youth.

#### **Results**

Number of volunteers enrolled continues to increase.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

#### Outcome #3

##### 1. Outcome Measures

4H 3.0: Youth become caring and contributing members of society through life skill development attained in the 4-H program. Indicators include: 4H 3.1: Youth contribute to community improvement; 4H 3.2: Youth develop goal-setting skills; 4H 3.3: Youth develop decision-making skills; 4H 3.4: Youth develop record keeping skills; 4H 3.5: Youth develop public speaking skills; 4H 3.6: Youth develop leadership skills; 4H 3.7: Youth develop responsibility.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2016	4014

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

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

Communities in Colorado depend on quality, contributing members of society. Fostering productive community members begins with our young people. 4-H is the premier youth development program of Colorado State University. Positive youth development addresses broader developmental needs of youth, in contrast to deficit-based models that focus solely on youth problems. Positive youth development occurs from an intentional process that promotes outcomes for young people by providing opportunities and relationships and externally, through the delivery of projects and curriculum designed according to the best practices of youth development.

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

- 4014 - 4H 3.1b: Youth develop goal-setting skills
- 6133 - Youth develop decision-making skills
- 5663 - Youth develop record keeping skills
- 4269 - Youth develop public speaking skills
- 5196 - Youth develop responsibility
- 4364 - Youth contribute to community improvement

**Results**

[one example]

The Embryology in the Schools program is presented each spring in Douglas County. This year three more schools were added in the fall due to high demand. Life skills of critical thinking, learning to learn, disease prevention, contribution to group effort, sharing, concern for others, and social skills were reported to have increased over 90% in each category with several over 96%.

**4. Associated Knowledge Areas**

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

**Outcome #4**

**1. Outcome Measures**

4H 4.1: Colorado youth apply STEM knowledge and skills in club, community and academic projects and programs.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	4908

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

**Issue (Who cares and Why)**

[one example] Connecting youth to real-world science projects plays an important role in developing interest in STEM careers. When children interact with simulated and real science projects they learn how the scientific method can be applied to solve problems in everyday life.

**What has been done**

The Rio Verde Archaeology 3D Artifact Dig was a huge success at the Pueblo County Fair. The activity was aimed to engage children 5 years and younger; however children of all ages ended up digging for artifacts in the simulated excavation that used 3D replicas of actual archaeological artifacts. The aim of the science, technology, engineering, art and mathematics (STEAM) project was to expose children to 3D printing technology and archaeology through play.

**Results**

The Rio Verde Archaeology 3D Artifact Dig activity is an authentic science experience aimed at introducing STEM concepts and careers to the next generation of students. By engaging them in

creative play, we support their ability to conceptualize an archaeological experience. We expand their experience by introducing them to technologies that engage their 21st Century skills.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

#### Outcome #5

##### 1. Outcome Measures

4H 5.1: Colorado K-12 youth apply content knowledge from 4-H in academic and community settings.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2016	2765

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

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

4-H projects provide learning opportunities in content, as well as life skills.

###### What has been done

[One example] a highlight in programming outreach for me this year was the County Fair Kids Tours. I organized the tours so that 4-H youth could share their knowledge and show their animals to youth visiting the fair whom did not have an agriculture background.

###### Results

Seeing the pride in the 4-H youth as they shared their knowledge with their peers, and seeing the amazement of the visiting youth at the achievements of their peers was incredible. Not only did youth get to experience a day about agriculture, they were inspired and connected with each other.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

**Outcome #6**

**1. Outcome Measures**

4H 6.0: 4-H Youth will become more aware and engaging in their community and community issues through the appreciation of cultural diversity and understanding in the democratic process. Indicators include: 4H 6.1: Youth will read or view news regularly and identify important issues. (8th grade only) 4H 6.2: Youth will engage in discussion with others and be critical consumers of information (8th graders only).4H 6.3: Youth will demonstrate value and respect for other cultures. 4H 6.4: Youth will engage in civic involvement. 4H 6.5: Youth participate in community service and volunteer.4H 6.6: Youth will demonstrate leadership efficacy. 4H 6.7: Youth will maintain future intentions for civic engagement. 4H 6.8: Youth demonstrate their ability to work effectively in teams. 4H 6.9: Youth will improve their knowledge of parliamentary procedure. 4H 6.10: Youth will increase their interactions with local, state, and national government. 4H 6.11: Youth will intend to vote.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2016	0

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

**Issue (Who cares and Why)**

4-H participation supports inclusive groups and civic engagement.

**What has been done**

0 - Youth will read or view news regularly and identify important issues. (8th grade only)

1100 - Youth will maintain future intentions for civic engagement.

2094 - Youth demonstrate their ability to work effectively in teams.

1470 - Youth will improve their knowledge of parliamentary procedure.

1742 - Youth will demonstrate value and respect for other cultures.

1223 - Youth will engage in civic involvement.

1391 - Youth will demonstrate leadership efficacy.

118 - Youth will engage in discussion with others and be critical consumers of information (8th graders only).

2966 - Youth participate in community service and volunteer.

1128 - Youth will increase their interactions with local, state, and national government.

1100 - Youth will intend to vote.

### Results

[One example] Diversity was the theme for the camp. I assembled a teen council to help plan the camp and gave each of them a workshop to do. They all stepped into their leadership role and the attendees enjoyed the older kids doing the workshops. Mark Platten did the Colors personality test and we used that for the different ways to identify how we diversify in our actions with one another. We had four adult volunteers that now have a better understanding of how youth can work together in a big group. Sportsmanship was another aspect that was taught in this camp. It is very important that the youth of the same county understand that competition is healthy, but it is only healthy if you encourage your fellow 4-Hers and be a good sportsman during the whole year of events. 54 of the 58 that were enrolled in the 4-H program for the year attended the camp. It was a huge success and the kids begged for another camp in 2017. It was a huge success and the kids begged for another camp in 2017.

### 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.)
- Other (competing family priorities)

#### Brief Explanation

Youth in most communities have many opportunities for activities.

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

#### Evaluation Results

4-H has various instruments available to agents so that data might be compiled statewide.

#### Key Items of Evaluation

##### Cloverbud Red, White, and Blue Camp

Each year Douglas County 4-H offers a day camp for our Cloverbud members. The camp always addresses life skills as well as some project areas. This summer's camp dealt with citizenship. Throughout the day, Cloverbuds learned how to fold the American flag, heard from a military kid about life with a military father, participated in activities and games related to their American heritage, and made gifts that were taken to a Veteran's facility.

Older 4-H youth help with the event also.

83% of the Cloverbuds who filled out an evaluation said that they learned something about the US flag. All Cloverbuds were able to name something that they did during Cloverbud Camp that they were proud of; most said it was making the treat bag for a veteran.

The older youth also filled out an evaluation showing that 100% of them felt they helped make the event a success and effective, they helped to develop leadership skills, they were responsible, they helped someone learn something new, and they made the community a better place by working with kids. Additionally, 93% felt they were able to help Cloverbuds learn by doing.

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

**Program # 2**

**1. Name of the Planned Program**

Family and Financial Security

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
801	Individual and Family Resource Management	65%		0%	
802	Human Development and Family Well-Being	35%		0%	
<b>Total</b>		100%		0%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	4.0	0.0	0.0	0.0
<b>Actual Paid</b>	4.6	0.0	0.0	0.0
<b>Actual Volunteer</b>	0.2	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
63058	0	0	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
63058	0	0	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
334198	0	0	0

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

1. Brief description of the Activity

Educational activities include adoption of curriculum, training for agents and other service providers, educational programs on financial and family management for individuals and families.

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

Colorado families, including diverse and difficult- to-reach populations.

**3. How was eXtension used?**

eXtension was not used in this program

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

**1. Standard output measures**

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	1270	845	110	0

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

**Patent Applications Submitted**

Year: 2016  
Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2016	Extension	Research	Total
<b>Actual</b>	3	0	0

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

**Output Target**

**Output #1**

**Output Measure**

- 1. Number of group educational events: classes, trainings, workshops, demonstrations, field days, providing content expertise, fairs, shows, booths, other group events.

**Year**                      **Actual**  
2016                              66

**Output #2**

**Output Measure**

- 2. Individual Education: one-on-one direct client contacts by site visit, office drop-in, e-mail, telephone, Ask an eXpert, etc.

<b>Year</b>	<b>Actual</b>
2016	350

**Output #3**

**Output Measure**

- 3. Number of meetings convened and/or facilitated; includes strategic participation that contributes to program development.

<b>Year</b>	<b>Actual</b>
2016	11

**Output #4**

**Output Measure**

- 7. Number of educational media releases: indirect contacts through media releases, appearances, newsletters, blog posts, other non-peer reviewed publications, kit development, non-peer reviewed curriculum, PowerPoints or videos.

<b>Year</b>	<b>Actual</b>
2016	13

**Output #5**

**Output Measure**

- 8. Number of online posts: Web posts, hits.

<b>Year</b>	<b>Actual</b>
2016	40025

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

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

O. No.	OUTCOME NAME
1	FAFS 1.1: Participants across the lifecycle will apply financial best practices.
2	FAFS 1.1.1 Participants will plan to apply financial best practices.
3	FAFS 1.2: Participants will implement best practices of healthy development and relationships across the life cycle.
4	FAFS 1.2.1 Participants will plan to implement best practices of healthy development and relationships across the life cycle.

## **Outcome #1**

### **1. Outcome Measures**

FAFS 1.1: Participants across the lifecycle will apply financial best practices.

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2016	15211

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

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

In order to make sound financial decisions, individuals need to be equipped with a basic level of financial knowledge. They also need to be able to apply what they know to actual financial decision-making situations. Consumers demonstrate relatively low levels of financial literacy and have difficulty applying financial decision-making skills to real life situations. Financial decisions made by consumers affect individual or family current financial well being. There is a concern that consumers lack a working knowledge of financial concepts and do not have the tools they need to make decisions most advantageous to their economic wellbeing.

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

An overall goal for financial education for residents in [one] County is to ensure that everyone is equipped with the appropriate information, knowledge, skills and tools to make good financial decisions. In 2016, the agent conducted five personal finance programs with the Dollar Works2 curriculum; participated in America Saves Week 2016; was interviewed by USDA Radio News on the Factsheet, [Living on an Irregular Income]; participated in interviews for county Colorado Works Coordinator Case Manager position; wrote two articles for the CSU Extension Family and Financial Stability News Webpage; [Delay Gratification by Writing Goals] and [Running a Marathon or Managing Money].

This agent posted on Face Book three times about the value of setting a savings goal, reaching 268 with these Face Book posts.

Partnered with agencies such as Early Head Start, County Economic Services and County Government employees to conduct training for their clientele. They were generally one-time programs using the Dollar Works2 curriculum from the University of Minnesota Extension. The Dollar Works2 curriculum is culturally adapted for the Latino audience; thus it is available in both English and Spanish formats. That is important to the demographics of this community. I teach the concepts and a translator is available with the Spanish-speaking audiences if needed.

The Dollar Works2 is a financial education program designed to strengthen skills at managing

their personal finances and taking control of their financial decision making. It helps individuals and families understand basic economic concepts and learn skills to manage income. Generally, the units used most often for teaching sessions were Units 2 & 3. Outcomes include attitude about learning, new knowledge gained and intent to use new skills.

The objective of Unit 2 in the Dollar Works2 curriculum is to help learners identify money goals that reflect their values and to develop skills in making decisions and talking about money.

**Results**

93% reported that they were likely to be committed to taking small steps to improve finances and 86% reported being likely or very likely to begin achieving a goal related to their health and wealth. There are continuing options through Facebook and Twitter applications after the workshop for the participants to continue.

**4. Associated Knowledge Areas**

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

**Outcome #2**

**1. Outcome Measures**

FAFS 1.1.1 Participants will plan to apply financial best practices.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2016	3050

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

**Issue (Who cares and Why)**

Financial, mental, physical, emotional and relational health are key components of well-being. Stable and successful individuals, families, and communities are important to the growth, development and health of our society. When people are in a state of financial and relational wellness, they are in control, confident and focused. They have greater balance and stability so they can concentrate on the most important tasks at hand such as weathering difficulties and making progress toward their goals. Family and financial stability education creates strong communities.

**What has been done**

[One example] During 2016, 38 money management classes were taught by an agent in the county. Participants were from the following programs: Homelessness Prevention Initiative, Housing Authorities, Best Start for Babies program, CSU Housing and Dining Services employees, County employees, business employees, CSU students, Catholic Charities, and CSU Administrative Professionals. People from the public also participated in the monthly "Take Charge of Your Finances" classes.

One train-the-trainer session was conducted for the School District's HeadStart Home Visitors employees, using the Consumer Financial Protection Bureau's curriculum "Behind On Bills?". This will potentially affect more than 400 HeadStart families in this school district. Four Money Education Volunteers and two staff members consulted one-on-one with participants in the Take Charge classes who were part of the Homelessness Prevention Initiative's "Education Extra" program, spending at least an hour with each of the 124 people in this program.

**Results**

More than 90% of the participants planned to implement at least one improved financial practice; in another population, 100% of the participants found the training to be valuable and planned to utilize the tools provided in the training.

**4. Associated Knowledge Areas**

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

**Outcome #3**

**1. Outcome Measures**

FAFS 1.2: Participants will implement best practices of healthy development and relationships across the life cycle.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2016	474

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

**Issue (Who cares and Why)**

Financial, mental, physical, emotional and relational health are key components of well-being. Stable and successful individuals, families, and communities are important to the growth, development and health of our society. When people are in a state of financial and relational

wellness, they are in control, confident and focused. They have greater balance and stability so they can concentrate on the most important tasks at hand such as weathering difficulties and making progress toward their goals. Family and financial stability education creates strong communities.

**What has been done**

Partnership for Age Friendly Communities has expanded this year. Agent is on the Steering Committee and has contributed to the process of planning for and transitioning the Partnership to 501c3 status. Agent played a leadership role on the PAFC Volunteerism team, helping to create a structure and process for recruiting, training, and managing volunteers. Agent led the PAFC Community Resources Team in assessing strategies for connecting seniors and their families to appropriate resources in the county. When a departmental mini-grant opportunity arose, the team was in the perfect position to apply for funding. Agent spearheaded the writing process for a grant proposal to fund the Access Points Project. This project brings together a community coalition to identify and pilot strategies for addressing senior resource access.

\*Agent teaches four different classes in venues across the county: Tame Your Stress, Change your Brain, Make it Stick, and Life Re-imagined. These classes focus on mindfulness, behavior change, and goal setting. The majority of classes are at senior centers and for County employees.

\*Agent served again as the County Wellness representative for Extension: helped to coordinate 18 classes that Extension offered through the county wellness program; brought a series of opportunities to the Extension office including training on the wellness portal, a nutrition education class, stress break workshops, and an Advance Care Planning workshop; coordinated a series of departmental wellness campaigns and supported staff in entering their wellness activities on the portal.

**Results**

Participants report they plan to implement best practices of healthy development and relationships across the life cycle.

**4. Associated Knowledge Areas**

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

**Outcome #4**

**1. Outcome Measures**

FAFS 1.2.1 Participants will plan to implement best practices of healthy development and relationships across the life cycle.

Not Reporting on this Outcome Measure

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

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

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

#### **Brief Explanation**

Public policies, local, county, state, and federal initiatives, economic conditions, profound advances in HDFS and financial capability research, public perceptions, personal values and sentiments about public issues, Extension staff changes, availability of funding, changes with stakeholders and partners will affect outcomes. Most of the program efforts are multi-year activities and cumulative rather than episodic in nature.

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

#### **Evaluation Results**

Increase in knowledge of sound financial concepts.  
Plans to adopt sound financial practices  
Actual changes in adoption of financial practices.

#### **Key Items of Evaluation**

n/a

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

**Program # 3**

**1. Name of the Planned Program**

Nutrition, Food Safety & Health

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	30%		50%	
704	Nutrition and Hunger in the Population	5%		20%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	5%		10%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	30%		15%	
724	Healthy Lifestyle	30%		5%	
	<b>Total</b>	100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	45.0	0.0	2.0	0.0
<b>Actual Paid</b>	9.7	0.0	5.0	0.0
<b>Actual Volunteer</b>	0.2	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
516101	0	623622	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
516101	0	623622	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1027594	0	7566149	0

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

**1. Brief description of the Activity**

Conduct basic and applied research on nutrition and wellness.

HEALTH PROMOTION & DISEASE PREVENTION (NH) programs include:

- Strong Women, Strong Bones
- Heart Disease Awareness & Prevention
- Diabetes Awareness, Prevention and Management
- Nutrition Education for Low-income Audiences
- Nutrition and Wellness
- Multi-lesson series: Dining with Diabetes, Small Changes Make a Big Difference, Strong Women-Strong Bones, Moving Toward a Healthier You, Healthy Heart, Smart-START for a Healthy Heart
- Self-paced program - Self-Care for a Healthy Heart
- Single lessons - Workable Wellness (work site wellness).
- Youth programs: Food Friends-Making New Foods Fun for Kids, Eating Right Is Basic, Chef Combo's Fantastic Adventures in Tasting and Nutrition, Professor Popcorn

FOOD SAFETY (FSAFE) Education

- Food Safety training for consumers, high risk audiences and their caregivers.(Eat Well for Less, La Cocina Saludable, Work site Wellness, Safe Home Food Preparation and Preservation, Promotion at Farmers Markets.)
- Food Safety Training for Food Service Managers and Workers (Food Safety Works, ServSafe, Food Safety for Food Bank Workers).Some of these programs are fee-based.
- Food Safety Training to comply with the Food Safety Modernization Act.

Promoting Food Security

- Multi-lesson series programs-Eat Well for Less, La Cocina Saludable]
  - Single event programs targeting limited resource families
  - Newsletters-Senior Nutrition News
- Research
- Development of new technologies for improving food safety
  - Determine important relationships between diet, food composition, and health

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

Targeted audiences include preschool children, youth preK-12, and adults of all ages, limited resource families, pregnant women, seniors and caretakers responsible for the health and well-being of these specific audiences. Additional specific audiences include small food producers, food handlers, Colorado cottage food entrepreneurs, farmers' market managers and food vendors.

For Research: - Producers and processors of plant and animal agricultural products.

**3. How was eXtension used?**

eXtension was not used in this program

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

**1. Standard output measures**

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	2019	2592	315	0

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

**Patent Applications Submitted**

Year: 2016  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2016	Extension	Research	Total
Actual	1	51	0

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

**Output Target**

**Output #1**

**Output Measure**

- 1. Number of group educational events: classes, trainings, workshops, demonstrations, field days, providing content expertise, fairs, shows, booths, other group events.

Year	Actual
2016	44

**Output #2**

**Output Measure**

- 2. Individual Education: one-on-one direct client contacts by site visit, office drop-in, e-mail, telephone, Ask an eXpert, etc.

<b>Year</b>	<b>Actual</b>
2016	1200

**Output #3**

**Output Measure**

- 3. Number of meetings convened and/or facilitated; includes strategic participation that contributes to program development.

<b>Year</b>	<b>Actual</b>
2016	1

**Output #4**

**Output Measure**

- 4. Number of kits or similar resources loaned or provided.

<b>Year</b>	<b>Actual</b>
2016	1

**Output #5**

**Output Measure**

- 5. Number of Extension-related research and assessment projects. External funding proposals, including local, state, federal. NH 9) Newsletters - This is number of newsletters, not number mailed or number of Coloradans who received them, such as Family Matters & others.

<b>Year</b>	<b>Actual</b>
2016	1

**Output #6**

**Output Measure**

- 7. Number of educational media releases: indirect contacts through media releases, appearances, newsletters, blog posts, other non-peer reviewed publications, kit development, non-peer reviewed curriculum, PowerPoints or videos.

<b>Year</b>	<b>Actual</b>
2016	46

**Output #7**

**Output Measure**

- 8. Number of online posts: Web posts, hits.

<b>Year</b>	<b>Actual</b>
2016	3555

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

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

O. No.	OUTCOME NAME
1	NFSH A1.1a Action Outcome (Intent to Change): NFSH A1.1a The number of Coloradans that reported an intention to eat more of healthy foods.
2	NFSH A1.1b Action Outcome (Behavior Change): NFSH A1.1b The number of Coloradans that reported eating more of healthy foods.
3	NFSH A1.2a The number of Coloradans that reported an intention to eat less of foods/food components which are commonly eaten in excess.
4	NFSH A1.2b The number of Coloradans that reported eating less of foods/food components which are commonly eaten in excess.
5	NFSH A2.1a The number of Coloradans that reported an intention to increase their physical activity and/or reducing sedentary time.
6	NFSH A2.1b The number of Coloradans that reported increasing their physical activity, reducing sedentary time, or meeting the recommended amount of physical activity.
7	NFSH A3.1a. Participants who report intent to adopt recommended food safety practices related to safe food production, processing, transport, preparation, preservation, consumption and/or food storage.
8	NFSH A3.2. Participants will adopt skills necessary to teach others about food safety practices that reduce risk of foodborne illness.
9	NFSH A3.1b. Action Outcome (Behavior Change): Participants who report adopting a learned food safety practice related to safe food production, processing, transport, preparation, preservation, consumption and/or food storage.
10	NFSH L4.1a. Learning Outcome (Knowledge Gained): Participants who gain knowledge necessary to apply food safety principles in a work-related setting and to teach these principles to others.

**Outcome #1**

**1. Outcome Measures**

NFSH A1.1a Action Outcome (Intent to Change): NFSH A1.1a The number of Coloradans that reported an intention to eat more of healthy foods.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	0

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

**Issue (Who cares and Why)**

{No Data Entered}

**What has been done**

{No Data Entered}

**Results**

{No Data Entered}

**4. Associated Knowledge Areas**

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

**Outcome #2**

**1. Outcome Measures**

NFSH A1.1b Action Outcome (Behavior Change): NFSH A1.1b The number of Coloradans that reported eating more of healthy foods.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2016	0

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

**Issue (Who cares and Why)**

{No Data Entered}

**What has been done**

{No Data Entered}

**Results**

{No Data Entered}

**4. Associated Knowledge Areas**

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

**Outcome #3**

**1. Outcome Measures**

NFSH A1.2a The number of Coloradans that reported an intention to eat less of foods/food components which are commonly eaten in excess.

Not Reporting on this Outcome Measure

#### **Outcome #4**

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

NFSH A1.2b The number of Coloradans that reported eating less of foods/food components which are commonly eaten in excess.

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2016	550

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

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

In response to a rise in Diabetes and other chronic health issues, CSU Extension in northeast Colorado developed a 12-week health and fitness challenge to serve as an educational and motivational method to encourage adults to make healthy lifestyle changes.

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

[One example] 2016 marked the tenth year of the program, which is implemented in seven counties in northeast Colorado at the beginning of each New Year. People are generally motivated to make personal behavior resolutions, and the winter months often work against their pledges to eat healthy and increase physical activity. Therefore, the team challenge was created to provide incentive, motivation, support and education to increase the success rate for healthier lifestyle habits.

###### **Results**

In terms of food and nutrition behaviors, the most prevalent change was to watch and reduce food portions, followed closely by making better/healthier food choices. Several people increased their fruit and vegetable consumption, and many people drank more water. A few people reported a reduction in sugar, salt or caffeine consumption; and one person focused on the mindful eating scale.

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

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

**Outcome #5**

**1. Outcome Measures**

NFSH A2.1a The number of Coloradans that reported an intention to increase their physical activity and/or reducing sedentary time.

Not Reporting on this Outcome Measure

**Outcome #6**

**1. Outcome Measures**

NFSH A2.1b The number of Coloradans that reported increasing their physical activity, reducing sedentary time, or meeting the recommended amount of physical activity.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	418

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

**Issue (Who cares and Why)**

Noted rise in Diabetes and other chronic health issues.

**What has been done**

[one example] A Healthier Weigh, implemented in seven counties at the beginning of the new year.

**Results**

An overview of the program by the numbers, shows 145 people, out of 183 enrolled, completed the 12-week challenge for a 79% completion rate. Those people completing the program logged over 64,713 miles of steps/physical activity. They lost a collective 719.4 pounds of body weight and lost 241.5 inches from their waist measurements.

**4. Associated Knowledge Areas**

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

724 Healthy Lifestyle

**Outcome #7**

**1. Outcome Measures**

NFSH A3.1a. Participants who report intent to adopt recommended food safety practices related to safe food production, processing, transport, preparation, preservation, consumption and/or food storage.

Not Reporting on this Outcome Measure

**Outcome #8**

**1. Outcome Measures**

NFSH A3.2. Participants will adopt skills necessary to teach others about food safety practices that reduce risk of foodborne illness.

Not Reporting on this Outcome Measure

**Outcome #9**

**1. Outcome Measures**

NFSH A3.1b. Action Outcome (Behavior Change): Participants who report adopting a learned food safety practice related to safe food production, processing, transport, preparation, preservation, consumption and/or food storage.

Not Reporting on this Outcome Measure

**Outcome #10**

**1. Outcome Measures**

NFSH L4.1a. Learning Outcome (Knowledge Gained): Participants who gain knowledge necessary to apply food safety principles in a work-related setting and to teach these principles to others.

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

Natural Disasters:

- Wild fires, power outages brought on by weather extremes (flooding, storms, tornados,) or other reasons creates the need for timely and effective food safety education during both the crisis and recovery period involving collaboration with public health and government agencies, the media, emergency response networks and others depending on the situation.
- An emergency may also result from loss of employment, therefore decreasing financial resources available to purchase foods. Whatever the situation, knowledge of food safety and storage is important.

Economy:

- Can affect food safety, nutrition and health, such as affordability and accessibility to safe and wholesome foods. Families with limited resources can benefit from information such as how to stretch food dollars to provide healthful and safe foods. Individuals seeking jobs need support with entrepreneurial efforts such as starting a Cottage Foods business.

Public policy changes:

- Can affect food safety, nutrition and health, such as affordability and accessibility to safe and wholesome foods. Examples may include changes to school wellness policies; training opportunities for school personnel and food service staff, increases in funding for childhood obesity in the state and communities.

Government regulations:

- Changes in FDA food code effect food safety training opportunities for retail food and school food service staff. Legislation changes regarding the cottage food industry may require focused effort by this PRU to develop and deliver targeted food safety education. Funding for SNAP-ED and EFNEP is provided through federal sources. Changes in funding or program guidelines are plausible. Additionally, legislation regarding the School Nutrition program and the Farm bill may influence Extension programming.

- Changes with the Food Safety Modernization Act will influence programming.

Competing Public priorities

- In today's economic climate, Extension staff and partner agencies are being asked to

do more with less. Nutrition, food safety and health promotion programming may be a lower priority in some areas due to competing public priorities at both the local and state levels.

Population Changes:

- Increased numbers of Spanish speaking audiences requires greater accessibility to educational materials translated into Spanish.

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

### **Evaluation Results**

- What individual agents are evaluating include
- Increase in knowledge of sound financial concepts.
- Plans to adopt sound financial practices
- Actual changes in adoption of financial practices.

The Planning and Reporting Unit is not compiling data from individual evaluation reports.

### **Key Items of Evaluation**

n/a

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

**Program # 4**

**1. Name of the Planned Program**

Livestock & Range

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
121	Management of Range Resources	50%		10%	
301	Reproductive Performance of Animals	0%		15%	
302	Nutrient Utilization in Animals	0%		15%	
303	Genetic Improvement of Animals	0%		15%	
307	Animal Management Systems	50%		20%	
311	Animal Diseases	0%		10%	
315	Animal Welfare/Well-Being and Protection	0%		10%	
601	Economics of Agricultural Production and Farm Management	0%		5%	
	<b>Total</b>	100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	13.0	0.0	5.0	0.0
<b>Actual Paid</b>	9.2	0.0	11.0	0.0
<b>Actual Volunteer</b>	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
170961	0	335543	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
170961	0	335543	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
597575	0	4071002	0

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

**1. Brief description of the Activity**

- Workshops and educational classes for producers
- Demonstration field days to showcase the results
- Individual counseling on producers' specific problems
- Conduct basic and applied research on livestock, primarily beef, dairy, sheep, and horses

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

Youth and adult livestock producers as well rangeland managers and ranchers.

**3. How was eXtension used?**

eXtension was not used in this program

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

**1. Standard output measures**

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	3195	2166	40	0

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

**Patent Applications Submitted**

Year: 2016

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2016	Extension	Research	Total
Actual	1	61	0

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

**Output Target**

**Output #1**

**Output Measure**

- 1. Number of group educational events: classes, trainings, workshops, demonstrations, field days, providing content expertise, fairs, shows, booths, other group events.

Year	Actual
2016	24

**Output #2**

**Output Measure**

- 2. Individual Education: one-on-one direct client contacts by site visit, office drop-in, e-mail, telephone, Ask an eXpert, etc.

Year	Actual
2016	691

**Output #3**

**Output Measure**

- 3. Number of meetings convened and/or facilitated; includes strategic participation that contributes to program development.

Year	Actual
2016	15

**Output #4**

**Output Measure**

- 4. Number of kits or similar resources loaned or provided.

Year	Actual
2016	15

**Output #5**

**Output Measure**

- 5. Number of Extension-related research and assessment projects. External funding proposals, including local, state, federal.

<b>Year</b>	<b>Actual</b>
2016	4

**Output #6**

**Output Measure**

- 7. Number of media releases: indirect contacts through educational media releases, appearances, newsletters, blog posts, other non-peer reviewed publications, kit development, non-peer reviewed curriculum, PowerPoints or videos.

<b>Year</b>	<b>Actual</b>
2016	18

**Output #7**

**Output Measure**

- 8. Number of online posts: Web posts, hits.

<b>Year</b>	<b>Actual</b>
2016	16

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

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

O. No.	OUTCOME NAME
1	LR Action Outcome 1.1: Livestock and range land managers apply newly gained information, technology, or skills to improve animal health and/or animal production.
2	LR Action Outcome 1.2: Livestock and range land managers apply newly gained information, technology, or skills to improve range land health.
3	LR Action Outcome 1.3: Livestock and rangeland managers apply newly gained information, technology, or skills to improve economic sustainability.
4	LR Action Outcome 1.4: Livestock and rangeland managers develop/write a management plan (i.e. grazing plan, feeding plan, drought plan, business plan, etc.)
5	LR Action Outcome 1.5: Number of animals where health/production was affected/improved.
6	LR Action Outcome 1.6: Number of acres on which rangeland health was affected/improved.
7	LR Action Outcome 2.1: Livestock and range land managers apply newly gained information in their decision making process for following or developing new industry policies and regulations.
8	Evaluation of Genetic Beef Cattle

## **Outcome #1**

### **1. Outcome Measures**

LR Action Outcome 1.1: Livestock and range land managers apply newly gained information, technology, or skills to improve animal health and/or animal production.

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2016	470

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

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

[One example]

Pueblo County with its large agricultural base also has a growing suburban population. This suburban population contains many people whom are very involved in the local foods movement. Many desire to grow at least part of their own food. One area of particular interest year after year is backyard chickens for egg production. These animals fit well into these small acreage home sites and the interest in them continues to grow. Many of those that desire to raise chickens are limited in their experience with raising any type of animal for production purposes ...

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

...for this reason we held a Backyard Chicken class. We had 19 participants in the class that ranged from those that already had chickens to those who were just considering getting some for the first time. We discussed local ordinances pertaining to the raising of fowl in the city and metro area. I then went on to present information regarding the basic needs of chickens including nutritional, health and shelter. The class was a success with accurate, unbiased information presented. The intent was to neither encourage nor discourage people from raising backyard chickens, but to provide information so that they could make the best decision regarding their own situation for themselves and the animals that would be under their care.

#### **Results**

Responses following the class indicated that some who wanted to get chickens before the class had changed their mind while others were now more prepared and going to continue with their plans to raise backyard chickens. This class not only raises awareness among the people about the proper care of poultry but provides for a healthier life for both the people and the animals as well.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

#### Outcome #2

##### 1. Outcome Measures

LR Action Outcome 1.2: Livestock and range land managers apply newly gained information, technology, or skills to improve range land health.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2016	768

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

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

[one example] Over the past several years, the grasshopper population in Pueblo County continues to rise. This year proved to be another bad year for grasshoppers as many areas across the county saw very large numbers of them. They destroyed rangeland, crops, gardens and landscaping as they moved about.

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

The first few years it took me by surprise and I spent more time reacting to the problem than actually being prepared for it. This year I attempted to be more proactive and held a class on grasshoppers before they became a problem. One major reason for hosting the class early was the fact that almost all control measures for grasshoppers need to be done while they are young. Once the grasshopper reaches maturity, it becomes very resilient to most chemical methods of control. By timing the class prior to the hatch of the grasshoppers, I was better able to prepare the people for what was to come and they in turn had a better chance of successfully controlling the grasshoppers when they did arrive.

###### **Results**

This class was very informative for those that attended. It opened up lines of communication for me to have the opportunity to answer questions for them later in the season when they first began to see young grasshoppers rather than them waiting until it was too late to control them. We discussed the economic impact grasshoppers can have as well as threshold levels in which control measures begin to repay themselves. Participants were able to make educated decisions

on the level of control needed and its impact to their resources. I still received numerous calls throughout the summer from concerned landowners that did not attend the class. Hopefully, we will see them in a class next year.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
121	Management of Range Resources

#### Outcome #3

##### 1. Outcome Measures

LR Action Outcome 1.3: Livestock and rangeland managers apply newly gained information, technology, or skills to improve economic sustainability.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2016	590

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

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

[One example]

The current economic situation for agricultural producers is difficult at best and for the majority of farmers and ranchers in Colorado, the ability to breakeven is barely possible. Costs of production are high, and with market prices being low for farmers and ranchers, financial impacts in the near future could be significant for some producers.

###### What has been done

Recognizing the need for help and assistance with this issue, a workshop is being planned for January 24, 2017 at the Lewis-Arriola Community Center. This workshop is a cooperative effort between CSU Extension, the Farm Service Agency, NRCS, local Ag Business Leaders, and local Ag Banking Partners. It is also planned that this issue will be continually addressed throughout 2017 and will be driven by the needs of local agricultural producers.

###### Results

This event planning is responsive to mental health issues and concerns in rural counties.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
121	Management of Range Resources
307	Animal Management Systems

#### Outcome #4

##### 1. Outcome Measures

LR Action Outcome 1.4: Livestock and rangeland managers develop/write a management plan (i.e. grazing plan, feeding plan, drought plan, business plan, etc.)

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2016	0

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

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

This relates also to emergency planning and management. Fires and floods in Colorado have necessitated Extension's participation in disaster planning and in emergency management.

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

[One example] Incident Command System (ICS) 100, 200, 300, and 700 is highly regarded as the most effective means of coordinating multiple agencies in an emergency response (agent is involved in planning)[another example] Agents involved in response: October 3rd, a fire broke out on the southeast side of Beulah CO. It was driven by winds of over 60 MPH. It spread quickly and people had to move fast to evacuate their homes and their animals. We were staged at the Colorado State Fairground. A week went by and another fire broke out, this time in Custer County and then spread into the northwest side of Beulah, CO.

###### **Results**

First fire we received 80 animals (steers, cows, calves, heifer, llamas, goats, horses, burro, mini-mule) and small animals; second fire we received 93 (pigs, llamas, mini-donkeys, horses, colt, ponies, mini-goats, mules, goats) and small animals. CSU Extension plays a large part in the rescue of animals in emergency situations. We work in conjunction with many agencies in Pueblo including fire departments, sheriff and police departments, American Red Cross, Department of Wildlife, Pueblo Animal Services, Pueblo Zoo, Colorado Brand Inspectors, City/County Health Department, ARES, Colorado State Fairgrounds, local 4-H leaders, CART volunteers and

numerous other people who donate food, water, hay, large horse/cattle tanks, and food and drink for the volunteers. However, most of all we provide support and peace of mind to those people who are being evacuated from their homes with no idea of what they might go back to after the fire. They are confident and grateful that their animals are saved and are being taken care of by a group of dedicated volunteers and Extension staff.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
121	Management of Range Resources
307	Animal Management Systems

#### Outcome #5

##### 1. Outcome Measures

LR Action Outcome 1.5: Number of animals where health/production was affected/improved.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2016	0

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

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

{No Data Entered}

###### What has been done

{No Data Entered}

###### Results

{No Data Entered}

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

**Outcome #6**

**1. Outcome Measures**

LR Action Outcome 1.6: Number of acres on which rangeland health was affected/improved.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	2217096

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

**Issue (Who cares and Why)**

n/a

**What has been done**

n/a

**Results**

n/a

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
121	Management of Range Resources

**Outcome #7**

**1. Outcome Measures**

LR Action Outcome 2.1: Livestock and range land managers apply newly gained information in their decision making process for following or developing new industry policies and regulations.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	139

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

**Issue (Who cares and Why)**

n/a

**What has been done**

n/a

**Results**

n/a

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
121	Management of Range Resources
307	Animal Management Systems

**Outcome #8**

**1. Outcome Measures**

Evaluation of Genetic Beef Cattle

**2. Associated Institution Types**

- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	0

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

**Issue (Who cares and Why)**  
{No Data Entered}

**What has been done**  
{No Data Entered}

**Results**  
{No Data Entered}

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
303	Genetic Improvement of Animals

**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**

Livestock and range outcomes are dependent on public policies/regulations, climate, disease outbreaks for forages and livestock, and episodic natural disasters such as drought, flooding, blizzards, and wildfire. Additionally, changes in the stock market as well as increasing input costs (e.g. fuel costs) will affect livestock and range outcomes. These external factors will be addressed when possible in education and research efforts, but their influence on outcomes is likely to continue into the future.

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

**Evaluation Results**

n/a

### **Key Items of Evaluation**

CSU Extension plays a large part in the rescue of animals in emergencies. We work in conjunction with many agencies in Pueblo including fire departments, sheriff and police departments, American Red Cross, Department of Wildlife, Pueblo Animal Services, Pueblo Zoo, Colorado Brand Inspectors, City/County Health Department, ARES, Colorado State Fairgrounds, local 4-H leaders, CART volunteers and numerous other people who donate food, water, hay, large horse/cattle tanks, and food and drink for the volunteers. Most of all, we provide support and peace of mind to those people who are being evacuated from their homes with no idea of what they might go back to after the fire. They are confident and grateful that their animals are saved and are being taken care of by a group of dedicated volunteers and Extension staff.

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

**Program # 5**

**1. Name of the Planned Program**

Cropping Systems

Reporting on this Program

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

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	58%		15%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		25%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		15%	
206	Basic Plant Biology	0%		5%	
211	Insects, Mites, and Other Arthropods Affecting Plants	0%		5%	
212	Pathogens and Nematodes Affecting Plants	0%		5%	
213	Weeds Affecting Plants	0%		10%	
215	Biological Control of Pests Affecting Plants	0%		5%	
216	Integrated Pest Management Systems	35%		10%	
601	Economics of Agricultural Production and Farm Management	7%		5%	
	<b>Total</b>	100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	15.0	0.0	26.0	0.0
<b>Actual Paid</b>	8.0	0.0	18.0	0.0
<b>Actual Volunteer</b>	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
296803	0	716625	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
296803	0	716625	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1745312	0	8694512	0

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

**1. Brief description of the Activity**

- Conduct basic and applied research in plant productions systems.
- Workshops and educational classes for producers.
- Utilize demonstration plots and field days to communicate program results.
- Use individual counseling with producers and clientele on specific plant production problems.

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

Individual agricultural producers, homeowners, agribusinesses, and commodity organizations.

**3. How was eXtension used?**

eXtension was not used in this program

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

**1. Standard output measures**

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	11841	18906	10	0

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

**Patent Applications Submitted**

Year: 2016

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2016	Extension	Research	Total
Actual	13	90	0

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

**Output Target**

**Output #1**

**Output Measure**

- 1. Number of group educational events: classes, trainings, workshops, demonstrations, field days, providing content expertise, fairs, shows, booths, other group events.

Year	Actual
2016	9

**Output #2**

**Output Measure**

- 2. Individual Education: one-on-one direct client contacts by site visit, office drop-in, e-mail, telephone, Ask an eXpert, etc.

Year	Actual
2016	230

**Output #3**

**Output Measure**

- 3. Number of meetings convened and/or facilitated; includes strategic participation that contributes to program development.

Year	Actual
2016	12

**Output #4**

**Output Measure**

- 4. Number of kits or similar resources loaned or provided.  
Not reporting on this Output for this Annual Report

**Output #5**

**Output Measure**

- 5. Number of Extension-related research and assessment projects. External funding proposals, including local, state, federal.

<b>Year</b>	<b>Actual</b>
2016	1

**Output #6**

**Output Measure**

- 7. Number of media releases: indirect contacts through media releases, appearances, newsletters, blog posts, other non-peer reviewed publications, kit development, non-peer reviewed curriculum, PowerPoints or videos.

<b>Year</b>	<b>Actual</b>
2016	14

**Output #7**

**Output Measure**

- 8. Number of online posts: Web posts, hits.

<b>Year</b>	<b>Actual</b>
2016	6

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

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

O. No.	OUTCOME NAME
1	CS Outcome 1.1: Participants apply research-based techniques for improving soil quality and productivity, protecting and making the best uses of water resources, managing crop nutrients, and/or enhancing plant yields and quality in their farm fields.
2	CS Outcome 1.2: Participants use research-based knowledge of integrated pest management systems for the crops and cropping systems in their farmed fields and/or their adjacent landscapes within their property and right-of-ways.
3	CS Outcome 1.4: Participants write estate & farm transition plans with the intent to transfer farm management & eventual ownership to subsequent generations inside or outside families.
4	Improvement of Quality and Performance of Colorado wheat
5	Colorado Potato Breeding Program

## **Outcome #1**

### **1. Outcome Measures**

CS Outcome 1.1: Participants apply research-based techniques for improving soil quality and productivity, protecting and making the best uses of water resources, managing crop nutrients, and/or enhancing plant yields and quality in their farm fields.

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

- 1862 Extension
- 1862 Research

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2016	286

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

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

Irrigation water in the Ogallala Region is declining. Developing management practices to improve water use efficiency are critical to extend the life of the aquifer with reduced withdrawals or to minimize the impact of declining well output.

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

A large research project was developed in 2014 and funded by Colorado Corn and the Ogallala CAP grant. The project looked at the impact of residue and tillage management on irrigated corn production.

#### **Results**

The major emphasis was on the water dynamics of residue and tillage. Leaving residue in the field had several positive impacts. Snow capture during the winter months typically resulted in greater soil moisture at the beginning of the cropping season, which would result in less irrigation needed for vegetative growth. A second impact was reducing ET during the vegetative growth stage by 10%. Most of this reduction is associated with reduced evaporative losses in crop production. This would result in either less irrigation needed for a full irrigation management scenario or more stored soil moisture in a limited irrigation scenario and available for reproductive growth stages where water has a greater impact on yield potential. A third impact was on water infiltration. No tillage or high conservation tillage had the greatest water infiltration rates compared to removing residue from the system or full tillage management where little residue remained on the soil surface. As climate changes expect storms that are more volatile and the greater potential for short duration high precipitation intensity events, minimizing runoff from the field is important in reducing the need for irrigation.

#### 4. Associated Knowledge Areas

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

#### Outcome #2

##### 1. Outcome Measures

CS Outcome 1.2: Participants use research-based knowledge of integrated pest management systems for the crops and cropping systems in their farmed fields and/or their adjacent landscapes within their property and right-of-ways.

##### 2. Associated Institution Types

- 1862 Extension
- 1862 Research

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2016	200

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

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

Pesticide Applicator courses are required for licensing.

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

Western Colorado Pest Management Workshop: The workshop provides continuing education credits (CECs) for private, public, and commercial pesticide applicators.

Commercial Pesticide Applicator Testing through the internet in cooperation with the Colorado Dept. of Agriculture and Metro Institute: Extension Offices proctored tests.

Another example: Performs pest diagnosis and management consultations to county clients on various topics at the rate of about 30 per month (less during the winter months of course).

###### **Results**

Participants received the credits necessary to renew their Private Pesticide Applicator License.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems

### **Outcome #3**

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

CS Outcome 1.4: Participants write estate & farm transition plans with the intent to transfer farm management & eventual ownership to subsequent generations inside or outside families.

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2016	433

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

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

Two great risks faced by Colorado's farmers and ranchers are weather and the transfer of assets and businesses to the next generation. Estate planning issues are due primary to increasing asset values, a lack of cash for retirement, and the discomfort many people have talking about end-of-life issues.

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

Jeff Tranel received a grant (\$65,524) to deliver crop insurance and legacy/succession/estate planning education to Colorado's traditional, senior, transitional, women, beginning, and other producers. A total of 29 group trainings were conducted with 433 participants. Jeff Tranel collaborated with Extension Agents to promote the legacy/succession/estate planning workshops. He and Norm Dalsted delivered the education and providing follow-up coaching to numerous families. An attorney and wealth advisor in private practice also spoke at four of the trainings. Brent Young organized deliver of crop insurance trainings directly to producers and provided the required training to college students who in turn worked with producers. This effort was in collaboration with Northeastern Junior College's Department of Agriculture.

##### **Results**

- 85 producers working with trained college students analyzed the impacts of various crop insurance products on their farms.
- 207 workshop participants indicated an increased understanding of methods for improving intra-family communications.
- 207 workshop participants indicated an increased understanding of the four pillars of a "lasting legacy".
- 207 workshop participants began documenting their legacy, succession, and estate plans.
- 207 workshop participants indicated an increased understanding of strategies for retirement planning.

- 207 workshop participants indicated an increased understanding of strategies for transferring their farm/ranch businesses to the next generation.
- 76 participants committed to completing their succession and estate plans by meeting with legal, financial, and/or other professional counsel.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
601	Economics of Agricultural Production and Farm Management

#### Outcome #4

##### 1. Outcome Measures

Improvement of Quality and Performance of Colorado wheat

##### 2. Associated Institution Types

- 1862 Research

##### 3a. Outcome Type:

Change in Knowledge Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2016	0

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

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

{No Data Entered}

###### What has been done

{No Data Entered}

###### Results

{No Data Entered}

#### 4. Associated Knowledge Areas

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

201 Plant Genome, Genetics, and Genetic Mechanisms  
206 Basic Plant Biology

**Outcome #5**

**1. Outcome Measures**

Colorado Potato Breeding Program

**2. Associated Institution Types**

- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2016	0

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

**Issue (Who cares and Why)**

{No Data Entered}

**What has been done**

{No Data Entered}

**Results**

{No Data Entered}

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
201	Plant Genome, Genetics, and Genetic Mechanisms
206	Basic Plant Biology
212	Pathogens and Nematodes Affecting Plants

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

### **Brief Explanation**

The external factors marked above would cause changes in programming and the time Extension Agents and Specialists could devote to a specific program or topic. A natural disaster, such as drought, would cause additional programming to provide the education and information producers would need for businesses to survive. Decreases in appropriated budgets - county and/or state - would likely force agents to alter their work on cropping issues. Members of the Crops Team would change the topics presented in a workshop, change educational programming, and/or develop new or different technologies and strategies for crop producers if there were changes in government regulations.

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

### **Evaluation Results**

The Roggen Wheat Field Day was held on Monday, June 13, 2016 at 4:00 pm at the Cooksey Farms located southeast of Roggen, CO, approximately 7 miles east of Prospect Valley on Highway 52. Seventy-five wheat producers attended this event. Speakers at the event included campus-based faculty and field-based Extension agents.

A survey instrument with five questions was developed and administered to measure past and present impact at this year's wheat field day. We received back 70% of the surveys. Results indicate that producers do use the information gathered at the past field days and put it to good use. An example is that 77% of those surveyed do plant more than one wheat variety on their farm. Yield still is the top criteria for selecting a variety at 65% followed by drought resistance with 13% and then herbicide resistance at 9%. The impact of extension and CSU research could be seen in the question that asked, "What value do you feel you've gained in the past by using knowledge learned at wheat field days?" A weighted average of a 3.3-bushel increase per acre gained from knowledge implemented after attending previous wheat field days.

### **Key Items of Evaluation**

If you use this figure and multiple it by acres of dryland wheat grown in your county or for the whole state of Colorado, it represents a significant impact that Colorado State University Research and Extension has on the economy of the state. The figure calculated for the whole state based on the total wheat acres harvested in 2015 at an average price of \$5.05 per bushel and using the 3.3 bushel per acre attributed to CSU impact yield a \$39.2 million dollar increase.

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

**Program # 6**

**1. Name of the Planned Program**

Natural Resources

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	20%		20%	
111	Conservation and Efficient Use of Water	20%		20%	
121	Management of Range Resources	0%		10%	
205	Plant Management Systems	25%		20%	
216	Integrated Pest Management Systems	15%		10%	
307	Animal Management Systems	20%		10%	
605	Natural Resource and Environmental Economics	0%		10%	
	<b>Total</b>	100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	12.0	0.0	11.0	0.0
<b>Actual Paid</b>	0.9	0.0	9.0	0.0
<b>Actual Volunteer</b>	0.7	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
245853	0	1153461	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
245853	0	1153461	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1105755	0	13994465	0

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

**1. Brief description of the Activity**

- Conduct basic and applied research on environmental and natural resources issues.
- Colorado Master Gardener training and use of trained volunteers to increase capacity
- Colorado Native Plant Masters training and use of trained volunteers to increase capacity

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

Landowners, including small acreage (1-100 acres) and ranchers/farmers in Colorado will be our primary audience. A secondary audience will focus on training volunteers, realtors, and other professionals who in turn will take this information and educate their clientele on Extension's behalf.

**3. How was eXtension used?**

eXtension was not used in this program

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

**1. Standard output measures**

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	12575	3649	1890	0

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

**Patent Applications Submitted**

Year: 2016

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2016	Extension	Research	Total
Actual	1	77	0

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

**Output Target**

**Output #1**

**Output Measure**

- 1. Number of group educational events: classes, trainings, workshops, demonstrations, field days, providing content expertise, fairs, shows, booths, other group events.

Year	Actual
2016	706

**Output #2**

**Output Measure**

- 2. Individual Education: one-on-one direct client contacts by site visit, office drop-in, e-mail, telephone, Ask an eXpert, etc.

Year	Actual
2016	620

**Output #3**

**Output Measure**

- 3. Number of meetings convened and/or facilitated; includes strategic participation that contributes to program development.

Year	Actual
2016	39

**Output #4**

**Output Measure**

- 4. Number of kits or similar resources loaned or provided.

Year	Actual
2016	60

**Output #5**

**Output Measure**

- 5. Number of Extension-related research and assessment projects. External funding proposals, including local, state, federal. Release or Column (number submitted)

<b>Year</b>	<b>Actual</b>
2016	1

**Output #6**

**Output Measure**

- 7. Number of educational media releases: indirect contacts through media releases, appearances, newsletters, blog posts, other non-peer reviewed publications, kit development, non-peer reviewed curriculum, PowerPoints or videos.

<b>Year</b>	<b>Actual</b>
2016	51

**Output #7**

**Output Measure**

- 8. Number of online posts: Web posts, hits.

<b>Year</b>	<b>Actual</b>
2016	34740

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

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

O. No.	OUTCOME NAME
1	NR 1.1) Participants report implementation or intent to implement actions relating to water quality and quantity issues (such as well and septic system management, CO Water Law and regulations, water rights, best irrigation practices, stream quality issues, and/or drought tolerant landscaping.)
2	NR 1.2) Participants report implementation or intent to implement animal/wildlife-related conservation practices (such as improved manure management, livestock emergency preparedness, attracting pollinators, enhancing wildlife habitat, and/or deterring unwanted wildlife).
3	NR 1.3) Participants report implementation or intent to implement soil-related conservation practices (such as soil health, soil fertility, soil testing, erosion control, cover crops, composting, or soil compaction).
4	NR 1.4) Participants report implementation or intent to implement plant-related conservation practices (such as active weed management, pasture management techniques, grass stand establishment, planting windbreaks, planting native plants, and/or active forest management).
5	NR 1.5): Participants improve or intend to improve their practices, decisions and skills in action through timely access to pest management resources and/or pest identification and IPM implementation.
6	NR 1.6) The number of acres reported that are impacted (by weed management, planting natives, fire mitigation, pasture grasses, etc.
7	NR 1.7) Dollars saved by best management practices.
8	NR 1.8) Grant dollars awarded towards work in natural resources.
9	NR 1.9) User fees from programming.
10	Optimizing Colorado Agriculture's Water Footprint

## **Outcome #1**

### **1. Outcome Measures**

NR 1.1) Participants report implementation or intent to implement actions relating to water quality and quantity issues (such as well and septic system management, CO Water Law and regulations, water rights, best irrigation practices, stream quality issues, and/or drought tolerant landscaping.)

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2016	358

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

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

[one example] Southeast Colorado is an area that is frequently plagued with drought. An area with low rainfall amounts in normal years it does not take much for it to become abnormally dry. One way to try to combat these low rainfall periods is to take advantage of every drop of water that falls on the land.

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

This year I brought in an expert on how we can manipulate our lands in a way to capture and retain the often-elusive moisture in our soils.

The ideas and techniques presented are designed to slow the flow of water across the land in order to give it time to soak into the soil. Many of the storms we do receive in our area drop large amounts of water in a short period. These events usually create an abundance of runoff, as the ground does not have the time to let the rain soak in. Participants learned that with the proper construction of swales and the use of logs, rocks and other natural resources, they could slow the flow of runoff across their land and give the soil more time to accumulate the water.

#### **Results**

Examples were shown of those that have used these methods where springs that have not flowed for 20 years are now starting to produce water. Of those in attendance that filled out the post class survey 100% stated that they intended to apply at least some of the concepts to their own land.

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

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water

**Outcome #2**

**1. Outcome Measures**

NR 1.2) Participants report implementation or intent to implement animal/wildlife-related conservation practices (such as improved manure management, livestock emergency preparedness, attracting pollinators, enhancing wildlife habitat, and/or deterring unwanted wildlife).

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	1063

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

**Issue (Who cares and Why)**

[One example]

Mountain living provides many challenges, especially for newcomers.

**What has been done**

We set up a full day of programming to help residents both new and old meet some of these challenges on August 13 for the "Living in the Mountains" day. The morning started with an Emergency Preparedness presentation, and then moved on to living with wildlife and a presentation of local resources. The afternoon sessions included forest health, well and septic, and radon.

**Results**

We had 85 people attend the day, and many commented on how useful it was to them. Some newcomers to the County said that this was such a great way for us to learn everything they need to know about living here, and it was so convenient that it was all in one day. Even some long-term residents were surprised that they learned new information.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
111	Conservation and Efficient Use of Water

**Outcome #3**

**1. Outcome Measures**

NR 1.3) Participants report implementation or intent to implement soil-related conservation practices (such as soil health, soil fertility, soil testing, erosion control, cover crops, composting, or soil compaction).

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2016	405

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

**Issue (Who cares and Why)**

Often times we look at what is growing on top of the ground but are unaware of what is taking place beneath the ground.

**What has been done**

With the help of our new range specialist, a class was held on soil profiles. I was able to identify a location west of Pueblo that would allow me to dig two pits in neighboring fields to show the difference in soils due to past management. On one side of the fence was native ground that had never been tilled, on the other was ground that was once tilled and planted to wheat in the past but replanted back to native grasses.

**Results**

This side-by-side comparison was a valuable teaching tool as it allowed us to see major differences in soil quality without having to travel great distances. A fence only separated the two pits and even increased soil erosion was visible to even the untrained eye. This class was able to expose the attendees to the concept that what we do today to our land will still have an effect 50 plus years down the road.

**4. Associated Knowledge Areas**

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

**Outcome #4**

**1. Outcome Measures**

NR 1.4) Participants report implementation or intent to implement plant-related conservation practices (such as active weed management, pasture management techniques, grass stand establishment, planting windbreaks, planting native plants, and/or active forest management).

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	1392

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

**Issue (Who cares and Why)**

[One example]

Weed control is mandated by the Colorado Department of Agriculture across the state because of the threat to agriculture and native ecosystems. In Gilpin County, Extension acts as the Weed Manager for the County. The weed season was particularly active due to the spring and early summer moisture. Thistles were notably increased as a result.

**What has been done**

In Gilpin County, Extension acts as the Weed Manager for the County. The Weed ID and Control classes had 53 attendees, and we answered 276 questions on weeds. We put two weeds of concern on display each week at the Community Center, along with information about the weeds and how to treat them. We continued our long-standing annual oxeye daisy pull at East Portal on July 30, this time in partnership with just the USFS and the Friends of Indian Peaks. A small group did a second pull a month later to catch any missed plants; this should reduce seeds getting into the seed bank.

**Results**

The low-toxicity weed spray checkout program had great reach again this year; we checked out the spray to 46 properties this year, treating 198 acres and affecting 1142 acres. This is slightly down from last year, but many people reported that after using it for several years, they no longer had weeds. We also treated five key properties with strategic infestations of weeds. Both programs were funded by a \$6229 grant from the Colorado Department of Agriculture.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
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205 Plant Management Systems

**Outcome #5**

**1. Outcome Measures**

NR 1.5): Participants improve or intend to improve their practices, decisions and skills in action through timely access to pest management resources and/or pest identification and IPM implementation.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2016	403

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

**Issue (Who cares and Why)**

Cost savings result when participants implement sustainable landscaping practices, including pest control.

**What has been done**

Agents present classes on pest management and perform pest diagnosis and management consultations to county clients.

**Results**

- Native Plant Master Program reports impacts (previous six years)
- \$1,704,557 statewide economic impact due to reduced landscaping inputs and increased land productivity
- 952,605 acres affected by sustainable landscaping or alien invasive weed control completed by program participants
- 89,134 educational contacts made by volunteers
- 7,645 participants in the program
- 2,567 volunteers contributed 11,363 hours for a donated value of \$267,712.

**4. Associated Knowledge Areas**

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

**Outcome #6**

**1. Outcome Measures**

NR 1.6) The number of acres reported that are impacted (by weed management, planting natives, fire mitigation, pasture grasses, etc.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	33093

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

**Issue (Who cares and Why)**

n/a

**What has been done**

n/a

**Results**

n/a

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
205	Plant Management Systems

**Outcome #7**

**1. Outcome Measures**

NR 1.7) Dollars saved by best management practices.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	254028

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

**Issue (Who cares and Why)**

n/a

**What has been done**

n/a

**Results**

n/a

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
205	Plant Management Systems
216	Integrated Pest Management Systems
307	Animal Management Systems

**Outcome #8**

**1. Outcome Measures**

NR 1.8) Grant dollars awarded towards work in natural resources.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	22725

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

**Issue (Who cares and Why)**

n/a

**What has been done**

n/a

**Results**

n/a

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
205	Plant Management Systems
216	Integrated Pest Management Systems
307	Animal Management Systems

**Outcome #9**

**1. Outcome Measures**

NR 1.9) User fees from programming.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	37122

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

**Issue (Who cares and Why)**

n/a

**What has been done**

n/a

**Results**

n/a

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
205	Plant Management Systems
216	Integrated Pest Management Systems
307	Animal Management Systems

**Outcome #10**

**1. Outcome Measures**

Optimizing Colorado Agriculture's Water Footprint

**2. Associated Institution Types**

- 1862 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2016	0

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

**Issue (Who cares and Why)**

{No Data Entered}

**What has been done**

{No Data Entered}

**Results**

{No Data Entered}

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
205	Plant Management Systems
605	Natural Resource and Environmental Economics

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

**External factors which affected outcomes**

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

**Brief Explanation**

Natural Resource PRU outcomes are dependent on the needs and engagement levels of all landowners. Their needs and level of interest in change can be affected by weather, public policy, economy, and population changes. In addition, what benefits one segment may affect another segment.

Weather conditions such as drought, flooding, hail, fires, moisture/temperature trends influencing pathogen and pest life cycles, in addition to abiotic stress effects, which will require short/medium/long term redirection of effort to accommodate program needs for pest diagnostics and management strategies.

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

### **Evaluation Results**

n/a

### **Key Items of Evaluation**

#### **Native Plant Master Program impacts**

The program has found a cost-effective way to increase the sustainability of Colorado's managed and natural landscapes while reducing invasive weeds. Some of the impacts over the past six years include:

- \$1,704,557 statewide economic impact due to reduced landscaping inputs and increased land productivity
- 952,605 acres impacted by sustainable landscaping or alien invasive weed control completed by program participants
- 89,134 educational contacts made by volunteers
- 7,645 participants in the program
- 2,567 volunteers contributed 11,363 hours for a donated value of \$267,712.

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

**Program # 7**

**1. Name of the Planned Program**

Community 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
601	Economics of Agricultural Production and Farm Management	0%		40%	
605	Natural Resource and Environmental Economics	0%		40%	
608	Community Resource Planning and Development	100%		10%	
610	Domestic Policy Analysis	0%		10%	
	<b>Total</b>	100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	1.0	0.0	6.0	0.0
<b>Actual Paid</b>	9.1	0.0	2.0	0.0
<b>Actual Volunteer</b>	0.8	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
273899	0	59022	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
273899	0	59022	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
882171	0	716087	0

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

**1. Brief description of the Activity**

- Training for Extension personnel in community mobilization, facilitation, economic development.
- Working with rural communities on a regional approach to small town tourism including making optimal use of environmental resources, respecting the socio-cultural authenticity of host communities while conserving their built and living cultural heritage and traditional values, and ensuring viable, long-term economic operations, including stable employment and income-earning opportunities.
  - Conducting basic and applied research in areas exploring the interface between agribusiness, rural development, and natural-resource-amenity-based opportunities.
  - Conducting workshops and other educational activities with Extension professionals and community stakeholders.

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

- Community members, general public, consumers, students, youth
- Communities and their formal and informal leaders in the public and private sector, businesses, entrepreneurs
- Community organizations, government agencies, other agencies, potential and existing non-profits, staff, board members, and others affiliated with the organization
- Emerging and existing adult and/or youth leaders reflecting community demographics and sectors, and underserved residents
- Community steering committee, workshop participants, project team members, community volunteers

**3. How was eXtension used?**

eXtension was not used in this program

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

**1. Standard output measures**

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	6780	10255	10	0

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

**Patent Applications Submitted**

Year: 2016  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2016	Extension	Research	Total
Actual	1	8	0

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

**Output Target**

**Output #1**

**Output Measure**

- 1. Number of group educational events: classes, trainings, workshops, demonstrations, field days, providing content expertise, fairs, shows, booths, other group events.

Year	Actual
2016	364

**Output #2**

**Output Measure**

- 2. Individual Education: one-on-one direct client contacts by site visit, office drop-in, e-mail, telephone, Ask an eXpert, etc.

Year	Actual
2016	1238

**Output #3**

**Output Measure**

- 3. Number of meetings convened and/or facilitated; includes strategic participation that contributes to program development.

Year	Actual
2016	834

**Output #4**

**Output Measure**

- 5. Number of Extension-related research and assessment projects. External funding proposals, including local, state, federal.

Year	Actual
2016	1534

**Output #5**

**Output Measure**

- 7. Number of educational media releases: indirect contacts through media releases, appearances, newsletters, blog posts, other non-peer reviewed publications, kit development,

non-peer reviewed curriculum, PowerPoints or videos.

<b>Year</b>	<b>Actual</b>
2016	527

**Output #6**

**Output Measure**

- 8. Number of online posts: Web posts, hits.

<b>Year</b>	<b>Actual</b>
2016	6197

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

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

O. No.	OUTCOME NAME
1	CD Outcome 1.1: Community members engage in community and economic development planning and action.
2	CD Outcome 1.2: Community plans are developed.
3	CD Outcome 1.3: Community plans are implemented.
4	CD Outcome 1.4: Entrepreneurs initiate new ventures (small business, invention, societal initiatives, community event/activity, etc. )
5	CD Outcome 1.5: Businesses, non-profits, agencies, community members increase links to resources and community assets.
6	CD Outcome: 1.6: Community members increase engagement in community and/or organization through new leadership opportunities.

## **Outcome #1**

### **1. Outcome Measures**

CD Outcome 1.1: Community members engage in community and economic development planning and action.

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2016	1115

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

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

It had started as a phone conversation nearly two years prior. The key question, was, how can we get agency personnel and ranchers interested in attending the same educational conference? The answer became finding common ground.

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

The Grass-Grazers-Families: Finding Common Ground Conference, to be more specific. It was a three-day training held in Pueblo November 1 to 3, 2016 that was put together by the Colorado Section Society for Range Management and the Pueblo County office, Colorado State University Extension. Additionally, Western SARE provided funding to support the travel costs of several speakers for the program and the Colorado State Fairgrounds provided assistance with facilities. Audience attendance across the three days was 97, 130, & 81 people, respectively; and represented Colorado, California, Montana, Nebraska, New Mexico, & Wyoming. There was information available for everyone with fourteen speaker presentations in the main hall and five separate demonstrations conducted outdoors.

#### **Results**

Results are ag-based, reached because of the community development effort to find common ground among agencies and ranchers: Amongst the data from the conference evaluations, 80.65% of respondents said that because of this conference they would change the way they manage or recommend management of resources. In another evaluation question, 89.3% of respondents indicated that by implementing concepts learned at this conference they could become a better steward of resources, making them more successful and sustainable.

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

**KA Code**    **Knowledge Area**  
608            Community Resource Planning and Development

**Outcome #2**

**1. Outcome Measures**

CD Outcome 1.2: Community plans are developed.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	1177

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

**Issue (Who cares and Why)**

[One example] In 2016, the county took over the fair and re-branded it to the Jeffco Fair & Festival. In addition to the many 4-H events and activities, the fair broadened its scope.

**What has been done**

Agent's role on the Steering Committee was to bring Extension concerns to the table, help develop plans for the Fair & Festival and evaluate throughout the process. Monthly meetings continue.

**Results**

The Fair & Festival provided more opportunities for CSU Extension to promote what we do, educate community members and generate interest. The event is also a community-building event intended to celebrate all of Jefferson County. Website: [celebratejeffco.com](http://celebratejeffco.com)

**4. Associated Knowledge Areas**

**KA Code**    **Knowledge Area**  
608            Community Resource Planning and Development

**Outcome #3**

**1. Outcome Measures**

CD Outcome 1.3: Community plans are implemented.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	2027

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

**Issue (Who cares and Why)**

[One example] Recognizing the shortage of fresh produce options at the local food pantries Eagle County adopted the produce for pantries program in 2014. While implemented, the program struggled to gain a foothold, and produce donations remained scant.

**What has been done**

To try to address this need, and to encourage others in the county, CSU Extension decided to create the Eagle County Garden Challenge. We offered our 9 garden plots to County department teams who grew veggies for donation to the local senior center. The program brought together 6 teams and over 20 county employed participants.

**Results**

The teams grew and donated over 300 pounds of produce to those in need. The program was so successful we wanted to expand opportunities for next year so we build 2 new garden beds, and built a caterpillar tunnel to serve as a season extension structure so we can have more, and a greater diversity, of crops. This also increased the exposure of Extension in the County and offered a greater opportunity for County employees to interact with us.

**4. Associated Knowledge Areas**

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

**Outcome #4**

**1. Outcome Measures**

CD Outcome 1.4: Entrepreneurs initiate new ventures (small business, invention, societal initiatives, community event/activity, etc. )

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	48

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

**Issue (Who cares and Why)**

[One example] Beginning farmers were looking to learn more about business skills relating to farming and ranching.

**What has been done**

Facilitated an 8-week, 24-contact hour course for 12 participants. All participants were beginning farmers looking to learn more about business skills relating to farming and ranching. CSU Extension Eagle worked with 7 different professionals/agencies to put on the course including Rocky Mountain Farmers Union, Northwest Small Business Development Center, Colorado State University professors, Pitkin County Open Space, local producers, NRCS, local small business lawyers, and a nonprofit. Participants and lectures came from 5 Colorado counties including Pitkin, Eagle, Garfield, Summit, and Denver.

**Results**

6 of the 12 participants went on to start their own business producing local food in the area while the others are very involved in the local Roaring Fork Farmers RMFU group and contribute knowledge they learned in class to policy discussions at meetings.

**4. Associated Knowledge Areas**

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

## **Outcome #5**

### **1. Outcome Measures**

CD Outcome 1.5: Businesses, non-profits, agencies, community members increase links to resources and community assets.

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2016	355

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

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

[One example]Following the success and networking series of the Building Farmers Program. Several classmates got together and expressed interest in building Caterpillar tunnels. Contrary to a standard high tunnel, the caterpillar is shorter, cheaper, and easier to install than a typical high tunnel. While NRCS will support growers with an EQIP grant to build a high tunnel their rules and regulations leave many growers ineligible. The NRCS high tunnels can only be used in systems where plants are being grown in ground, meaning anyone who would like to use their tunnel to grow and dry herbs, grow nursery stock, or house animals are out of luck.

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

CSU Extension Eagle got a group of 6 growers together and facilitated material ordering and a series of workshops to help the growers install their caterpillar tunnels. CSU Ext ended up even installing their own tunnel in the backyard of the extension office. In the end, CSU Extension helped build 4 of 6 tunnels and held workshops with 20 participants for all four of those builds.

#### **Results**

This effort will go a long way to helping growers in the region produce crops that need a longer or warmer growing season. One grower has already notified me that the longer growing season allowed his farm to pay off their caterpillar tunnel in one growing season! All caterpillar tunnel workshop participants reported a greater understanding of season extension techniques, the importance of season extension, and the materials/tools needed to construct your own caterpillar tunnel.

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

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

**Outcome #6**

**1. Outcome Measures**

CD Outcome: 1.6: Community members increase engagement in community and/or organization through new leadership opportunities.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	59

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

**Issue (Who cares and Why)**

Family voice is imperative for effective discussion and policy development.

**What has been done**

Family Leadership Training Institute (FLTI) is a 20 week civic engagement and leadership class offered by Extension in Colorado. Class goes from January through May. The class is for both adults and youth.

[one example]We are one of two sites in the nation who are piloting a two-generation model. We had tremendous results from this model for the second year in a row.

**Results**

We had tremendous results from this model for the second year in a row. This CYFAR-funded program shows outstanding evaluative results during the pilot.

**4. Associated Knowledge Areas**

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

With new emerging opportunities in communities, programs may shift in response to community needs. The Extension role in community development is emerging and it may take three to five years to establish strong programs with measurable outcomes.

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

### **Evaluation Results**

Difficult to assess specific community development when all Extension agents and AES personnel participate in CD all the time.

### **Key Items of Evaluation**

Watch Family Leadership Training Institute (FLTI) for results for youth and adults.

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

**Program # 8**

**1. Name of the Planned Program**

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
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	100%		0%	
<b>Total</b>		100%		0%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	2.5	0.0	0.0	0.0
<b>Actual Paid</b>	2.5	0.0	0.0	0.0
<b>Actual Volunteer</b>	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
111702	0	0	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
111702	0	0	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
133400	0	0	0

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

1. Brief description of the Activity

The PRU carries out assessments, outreach, and research to accomplish our goals.

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

Target audiences include homeowners, the general public, teachers, ag producers, rural Colorado communities, and, in some circumstances, policymakers.

**3. How was eXtension used?**

eXtension was not used in this program

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

**1. Standard output measures**

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	1723	4950	0	0

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

**Patent Applications Submitted**

Year: 2016  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2016	Extension	Research	Total
<b>Actual</b>	0	0	0

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

**Output Target**

**Output #1**

**Output Measure**

- 1. Number of group educational events: classes, trainings, workshops, demonstrations, field days, providing content expertise, fairs, shows, booths, other group events.

**Year                      Actual**

2016 478

**Output #2**

**Output Measure**

- 2. Individual Education: one-on-one direct client contacts by site visit, office drop-in, e-mail, telephone, Ask an eXpert, etc.

<b>Year</b>	<b>Actual</b>
2016	86

**Output #3**

**Output Measure**

- 3. Number of meetings convened and/or facilitated; includes strategic participation that contributes to program development.

<b>Year</b>	<b>Actual</b>
2016	40

**Output #4**

**Output Measure**

- 4. Number of kits or similar resources loaned or provided.

<b>Year</b>	<b>Actual</b>
2016	14

**Output #5**

**Output Measure**

- 5. Number of Extension-related research and assessment projects. External funding proposals, including local, state, federal.

<b>Year</b>	<b>Actual</b>
2016	70

**Output #6**

**Output Measure**

- 7. Number of educational media releases: indirect contacts through media releases, appearances, newsletters, blog posts, other non-peer reviewed publications, kit development, non-peer reviewed curriculum, PowerPoints or videos.

<b>Year</b>	<b>Actual</b>
2016	46

**Output #7**

**Output Measure**

- 8. Number of online posts: Web posts, hits.

<b>Year</b>	<b>Actual</b>
2016	29862

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

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

O. No.	OUTCOME NAME
1	Energy Outcome 1.1: Apply or intend to apply increased understanding of energy in personal and/or professional life (e.g. decide whether to move forward with an energy project, change behavior, have more informed discussions, etc.)
2	Energy Outcome 1.1a: Increased understanding of energy use, conservation, efficiency, and/or renewable energy in the home, school, business or community.
3	Energy Outcome 1.1b: Increased understanding of local, state, national, and/or global energy issues.

**Outcome #1**

**1. Outcome Measures**

Energy Outcome 1.1: Apply or intend to apply increased understanding of energy in personal and/or professional life (e.g. decide whether to move forward with an energy project, change behavior, have more informed discussions, etc.)

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	74

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

**Issue (Who cares and Why)**

Rural Colorado communities are a primary target audience for the PRU in order to take advantage of the historic strengths of Extension in rural communities and because rural Colorado is at the forefront of major energy issues in the state. The PRU carries out assessments, outreach, and research to accomplish our goals.

Our ultimate goal is to engage Colorado in energy opportunities that bring about economic and environmental benefits. This could include everything from community energy assessments that illuminate funding, financing, and/or workforce development opportunities in energy efficiency and renewable energy to expanding our STEM energy work in schools to continuing our Colorado Energy Master program and associated volunteer projects.

**What has been done**

"Solar Options for the Home" workshop: The content was perfect for our local current energy transition. Discussions about real costs, savings, and risk / benefits; both financial and environmental were very balanced and fact based.

**Results**

The "What, How and Why" structure enabled me to understand much better my personal situation as a homeowner and prepared me to negotiate intelligently with my power provider as well as with future PV contractors.

**4. Associated Knowledge Areas**

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

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

**Outcome #2**

**1. Outcome Measures**

Energy Outcome 1.1a: Increased understanding of energy use, conservation, efficiency, and/or renewable energy in the home, school, business or community.

Not Reporting on this Outcome Measure

**Outcome #3**

**1. Outcome Measures**

Energy Outcome 1.1b: Increased understanding of local, state, national, and/or global energy issues.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	0

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

## **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**

Weather extremes may focus public attention on energy and climate change, the economy affects people's desire to spend and save money through energy measures, appropriations can lead to changes in energy programming capacity, public policy and government regulation can increase scrutiny of energy issues, competing priorities and programs may serve to decrease interest in energy issues, population changes can affect the level of interest in energy programming.

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

### **Evaluation Results**

In 2017, the Energy PRU collected outcome indicators after webinars only. While most of our programming was delivered in settings where collecting indicator information wasn't logistically feasible or appropriate (i.e. we were one of multiple back-to-back presenters or delivered in-depth energy assessments to individual stakeholders), our stand alone webinars allowed for group data to be collected easily. x

### **Key Items of Evaluation**

We estimate that over 90% of participants indicated behavior change or increased understanding as a result of our webinars.

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

**Program # 9**

**1. Name of the Planned Program**

Environmental Horticulture

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	30%		30%	
111	Conservation and Efficient Use of Water	35%		35%	
216	Integrated Pest Management Systems	35%		35%	
	<b>Total</b>	100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	23.0	0.0	0.0	0.0
<b>Actual Paid</b>	14.9	0.0	4.0	0.0
<b>Actual Volunteer</b>	10.4	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
305733	0	216630	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
305733	0	216630	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
1083728	0	2628281	0

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

1. Brief description of the Activity

Provide up-to-date, research-based information for delivery horticultural programming for both rural and urban audiences.

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

Home gardeners and professional green industry professionals (ages 19+) and youth gardeners (ages 5-18 ).

**3. How was eXtension used?**

eXtension was not used in this program

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

**1. Standard output measures**

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	21178	2055973	882	250

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

**Patent Applications Submitted**

Year: 2016  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2016	Extension	Research	Total
<b>Actual</b>	4	6	0

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

**Output Target**

**Output #1**

**Output Measure**

- 1. Number of group educational events: classes, trainings, workshops, demonstrations, field days, providing content expertise, fairs, shows, booths, other group events.

<b>Year</b>	<b>Actual</b>
2016	145

**Output #2**

**Output Measure**

- 2. Individual Education: one-on-one direct client contacts by site visit, office drop-in, e-mail, telephone, Ask an eXpert, etc.

<b>Year</b>	<b>Actual</b>
2016	6475

**Output #3**

**Output Measure**

- 3. Number of meetings convened and/or facilitated; includes strategic participation that contributes to program development.

<b>Year</b>	<b>Actual</b>
2016	56

**Output #4**

**Output Measure**

- 4. Number of kits or similar resources loaned or provided.

<b>Year</b>	<b>Actual</b>
2016	205

**Output #5**

**Output Measure**

- 5. Number of Extension-related research and assessment projects. External funding proposals, including local, state, federal.

<b>Year</b>	<b>Actual</b>
2016	5

**Output #6**

**Output Measure**

- 7. Number of educational media releases: indirect contacts through media releases, appearances, newsletters, blog posts, other non-peer reviewed publications, kit development, non-peer reviewed curriculum, PowerPoints or videos.

<b>Year</b>	<b>Actual</b>
2016	111

**Output #7**

**Output Measure**

- 8. Number of online posts: Web posts, hits.

<b>Year</b>	<b>Actual</b>
2016	28097

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

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

O. No.	OUTCOME NAME
1	ENVHORT: Participants report using or intention to use new technologies and/or intention to adopt or adoption of best management practices and/or policies promoting best management practices in their landscapes, businesses and/or communities.
2	ENVHORT: Participants report intention to change or they have changed pest management strategies, intent to utilize or utilizing new technologies to assist with pest diagnosis and management, intent to adopt or adopting integrated pest management strategies and/or intention to adopt or adopting of policy promoting or utilizing integrated pest management strategies.
3	ENVHORT: As a result of Colorado Master Gardener (CMG) training and on-going support, CMGs report increased competence (confidence and proficiency/accuracy) in educating the public.

## **Outcome #1**

### **1. Outcome Measures**

ENVHORT: Participants report using or intention to use new technologies and/or intention to adopt or adoption of best management practices and/or policies promoting best management practices in their landscapes, businesses and/or communities.

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2016	1860

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

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

[one example] The NPM program here in Pueblo will be starting strong next Spring with formal outdoor courses and preparatory classroom style courses.

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

The Native Plant Masters of Pueblo County took community members on a stroll through the native short grass prairie on the CSU-Pueblo campus on September 14. This free wildflower walk was open to the public, and was an effort to pique some interest in the Native Plant Master program here in Pueblo County. The volunteers were spread out in stations that the participants rotated through. At each station, they learned how to recognize some of our most common and beloved native short grass prairie plants. They also learned fun facts about the plants, as well as some of their uses throughout history. The participants loved that they could also point out familiar species and learn about what they are and if they are native or invasive here in Pueblo.

#### **Results**

Many participants indicated that they intended to incorporate some of our beautiful native prairie plants into their own landscapes. Overall, this event was a huge success with over 40 members of the community joining the Pueblo County NPMs for an evening of fun and learning.

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

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
216	Integrated Pest Management Systems

**Outcome #2**

**1. Outcome Measures**

ENVHORT: Participants report intention to change or they have changed pest management strategies, intent to utilize or utilizing new technologies to assist with pest diagnosis and management, intent to adopt or adopting integrated pest management strategies and/or intention to adopt or adopting of policy promoting or utilizing integrated pest management strategies.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	1051

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

**Issue (Who cares and Why)**

n/a

**What has been done**

n/a

**Results**

n/a

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
216	Integrated Pest Management Systems

### **Outcome #3**

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

ENVHORT: As a result of Colorado Master Gardener (CMG) training and on-going support, CMGs report increased competence (confidence and proficiency/accuracy) in educating the public.

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2016	1537

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

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

Colorado Master Gardeners increase Extension's capacity through their volunteer commitment.

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

CMG training and support provided in person and on-line.

##### **Results**

As a result of the CMG training and support, do you believe you have?

Increased competence in educating the public: 76%  
Increased knowledge of mid management skills: 52%  
Increased knowledge of presentation skills : 48%  
Increased knowledge/awareness in community engagement: 47%  
Increase knowledge of interviewing practices: 40%  
Increased knowledge of technology: 39%  
Increased awareness event planning: 35%

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

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water

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

### External factors which affected outcomes

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

### Brief Explanation

**Natural Disasters** including invasive pest introduction, drought, flooding, hail, moisture/temperature trends can influence pest life cycles which will require redirection of effort to accommodate current needs.

**Economic problems** may lead more individuals to acquire/redirect their IPM strategies according to resource limitations or opportunity; more individuals may grow their own food crops, requiring redirection of programming efforts; individuals may spend less on landscape and turf, requiring redirection of programming efforts. Colorado Master Gardener volunteer numbers may be less due to increased costs associated with the program and personal economic situation.

**Government regulations** may alter pesticide, water and plant availability and use, redirecting efforts to alternative materials and methods.

**Population changes** may increase the demand on volunteer and staff time or may increase demands in specific areas such as food production. Increases in underserved populations may alter programming delivery methods.

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

### Evaluation Results

CMG: There is a statistically significant difference in average tenure of volunteers based on "distance education" sites (6.86 years) and "in-person" education sites (8.33 years). This may be due to only offering the distance education option in Colorado since 2006, and many counties have elected into the distance education option since that time.

### Key Items of Evaluation

The Colorado Master Gardener program began in Denver County in 1976 as a program of Colorado State University Extension. Today, the Colorado Master Gardener program is offered in 34 counties across Colorado. In the most recent annual report, 1,372 individual volunteers contributed 54,213 hours of volunteer service (valued at \$1,391,189) in 2015 in Colorado. Colorado Master Gardener volunteers participate in approximately 60 hours of research-based, non-credit instruction through either "In-person" instruction at county extension offices or via "Distance Education" live webinars with local classroom facilitation.

In January/February, 2016, active Colorado Master Gardener volunteers who had completed at least one year of training and volunteer service were asked to respond to an evaluation survey conducted through Qualtrics. The evaluation survey was written by a team of three extension agents, was peer reviewed by subject-matter experts to aid in instrument validity, and pilot-tested by 15 CMG volunteers. This evaluation was conducted under a research protocol approved by Colorado State University IRB.

One of the goals of this evaluation was to try to identify what components of the program contribute to volunteer retention. Retaining volunteers adds to the overall program

effectiveness, and its reputation as a trusted resource in our communities. Investment of initial and ongoing training by CSU Extension is "repaid" by continuing service. More importantly, volunteers gain invaluable experience through "hands-on" learning opportunities through service to their communities.

Additionally, this evaluation was a "check-in" with our volunteers to learn about areas where we are doing a good job, and areas that can be improved upon. This may be of the most value as the program moves forward to insure that CSU Extension provides the best experience for volunteers now and into the future.

Evaluation responses have been summarized by the study authors to help insure respondent confidentiality. We have also reported the top average responses and the bottom average responses as these were the most informative variables in this study.

#### Targeted Audience

Our survey was conducted to gain input from Colorado Master Gardeners with more than one year of service. It was important to our evaluation committee that we hear from the volunteers who had completed their training and initial volunteer commitment. The previous evaluation efforts (2010) were conducted on the "apprentice" master gardener volunteers; it had been many years since the continuing master gardener volunteers had been able to provide input.

642 respondents completed the evaluation out of 1,218 total continuing master gardener volunteers (targeted population), representing a 52.71 percent response rate. Some selected summary statistics are included below (along with 2-sample t-tests to determine if differences exist between program delivery methods).

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

**Program # 10**

**1. Name of the Planned Program**

Food Systems

Reporting on this Program

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

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	20%		30%	
604	Marketing and Distribution Practices	20%		45%	
608	Community Resource Planning and Development	35%		25%	
703	Nutrition Education and Behavior	5%		0%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	20%		0%	
	<b>Total</b>	100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2016	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	4.0	0.0	0.0	0.0
<b>Actual Paid</b>	5.5	0.0	2.1	0.0
<b>Actual Volunteer</b>	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
114055	0	116691	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
114055	0	116691	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
334198	0	1415766	0

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

**1. Brief description of the Activity**

Improved technical assistance for agricultural and food producers exploring new marketing channels and alternative business approaches. In addition, CSU will provide facilitation of community discussions around the interface between food and agricultural issues and broader social issues including public health, food safety, the environment and community development.

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

Youth and Adults who want to better understand the linkages between their food system and other community issues. Adults involved in specialty crop, vegetable, & fruit or integrated livestock production whose personal income is derived in large part from their farming activities.

**3. How was eXtension used?**

eXtension was not used in this program

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

**1. Standard output measures**

2016	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	3925	2505	50	0

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

**Patent Applications Submitted**

Year: 2016

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2016	Extension	Research	Total
Actual	1	9	0

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

**Output Target**

**Output #1**

**Output Measure**

- 1. Number of group educational events: classes, trainings, workshops, demonstrations, field days, providing content expertise, fairs, shows, booths, other group events.

Year	Actual
2016	19

**Output #2**

**Output Measure**

- 2. Individual Education: one-on-one direct client contacts by site visit, office drop-in, e-mail, telephone, Ask an eXpert, etc.

Year	Actual
2016	98

**Output #3**

**Output Measure**

- 3. Number of meetings convened and/or facilitated; includes strategic participation that contributes to program development.

Year	Actual
2016	50

**Output #4**

**Output Measure**

- 4. Number of kits or similar resources loaned or provided.  
Not reporting on this Output for this Annual Report

**Output #5**

**Output Measure**

- 5. Number of Extension-related research and assessment projects. External funding proposals, including local, state, federal.

<b>Year</b>	<b>Actual</b>
2016	1

**Output #6**

**Output Measure**

- 7. Number of educational media releases: indirect contacts through media releases, appearances, newsletters, blog posts, other non-peer reviewed publications, kit development, non-peer reviewed curriculum, PowerPoints or videos.

<b>Year</b>	<b>Actual</b>
2016	17

**Output #7**

**Output Measure**

- 8. Number of online posts: Web posts, hits.

<b>Year</b>	<b>Actual</b>
2016	5

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

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

O. No.	OUTCOME NAME
1	Food Sys Outcome 1.1: Colorado communities and stakeholders become knowledgeable about and engage in civil public discourse on food and ag issues.
2	Food Sys Outcome 1.2: Colorado communities and stakeholders develop and conduct food and agricultural assessments, initiatives and planning efforts.
3	Food Sys Outcome 1.3: Food producers gain access to new market opportunities that foster food access, community development, environmental stewardship, and public health.

**Outcome #1**

**1. Outcome Measures**

Food Sys Outcome 1.1: Colorado communities and stakeholders become knowledgeable about and engage in civil public discourse on food and ag issues.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2016	526

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

**Issue (Who cares and Why)**

The Colorado Department of Public Health and Environment (CDPHE) and CSU Extension collaborated to sponsor Colorado Cottage Food Stakeholder meetings around the state. CDPHE did not have knowledge of who the cottage food producers were around the state, as the producers are not registered in Colorado.

**What has been done**

The Front Range Cottage Food Safety training team had collected the names and contact information for all of the food safety training participants around the state that attended training taught by this team. In 2016, the Cottage Food Stakeholder meetings centered on non-potentially hazardous cottage foods specifically the group wanted to make and sell pickled products and fermented products.

**Results**

CSU Extension would send out information to the cottage food list serve related to the Stakeholder meetings, share the minutes with everyone, and provided a means for people to join the meeting even if they could not drive to Denver for the meetings. Producers could join the meetings via a webinar or conference call.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
601	Economics of Agricultural Production and Farm Management
604	Marketing and Distribution Practices
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and

## Communities

### **Outcome #2**

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

Food Sys Outcome 1.2: Colorado communities and stakeholders develop and conduct food and agricultural assessments, initiatives and planning efforts.

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2016	75

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

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

Governments of the Roaring Fork Valley are focusing a lot of effort and financial resources on preserving their local agricultural system. The Counties in the area have come together to buy up several parcels and preserve them as open space. With these purchases comes the opportunity to maintain viable agricultural operations, or develop new agriculture businesses. This has also lead to several community discussions about what to do with the agriculture properties and what it would take to develop a new agriculture economy in the valley. Tie that in with the lack of affordable housing in the valley and many of people are seeing an opportunity to make really positive changes that would address both problems.

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

Two of the groups leading the engagement efforts in the valley are Roaring Fork Farmers and Roaring Fork Food Policy. Eagle Extension is active with both groups and is a key member in conversations concerning new farmers markets, social events, land use on newly acquired agriculture properties, and housing issues for beginning farmers. Extensions participation in these groups has also lead to other successful workshops and classes. Many participants in these groups also attended the Colorado Building Farmers classes, and were the impetus behind the caterpillar tunnel workshop series. Overall, these meetings typically attract 35-50 people, which creates a great venue to support our local farmers and ranchers and to determine their needs, and how Extension can be of further assistance to them.

##### **Results**

These meetings are spawning grant opportunities, workshops, and site visits to assist growers.

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

<b>KA Code</b>	<b>Knowledge Area</b>
601	Economics of Agricultural Production and Farm Management
604	Marketing and Distribution Practices
608	Community Resource Planning and Development
703	Nutrition Education and Behavior

### **Outcome #3**

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

Food Sys Outcome 1.3: Food producers gain access to new market opportunities that foster food access, community development, environmental stewardship, and public health.

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2016	21

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

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

The education coordinator at Hudson Gardens contacted Sheila Gains in Arapahoe County to about a need for a Cottage Food Safety Class specifically for local honey producers that are part of an educational support group coordinated by Hudson Gardens. At that time of the request the Colorado Cottage Food Act included honey, but specific honey sanitation information was not covered in the curriculum.

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

Extension collaborated with Hudson Gardens, the Colorado State Beekeepers Association, Marisa Bunning and several local beekeepers to develop additional slides covering best practices for small scale harvest, packaging and labeling under the Colorado Cottage Food Act. Resources used include Cornell Cooperative Extension, Colorado Beekeepers Association, Colorado Department of Public Health & Environment and USDA. A class of 21 beekeepers/honey producers piloted the new materials on May 14, 2016 at Hudson Gardens. After minor revisions, the new slides and materials have been presented at 4 additional Denver Metro Cottage Food Safety classes in 2016. Participants wanting to sell honey appreciate the information on best sanitation practices specific to honey production.

##### **Results**

100% of the 100 Cottage Food Safety Class participants who have attended classes sense the addition of honey best practices curriculum have passed the food safety test and are now able to legally sell allowed items, including honey to the public.

#### 4. Associated Knowledge Areas

<b>KA Code</b>	<b>Knowledge Area</b>
601	Economics of Agricultural Production and Farm Management
604	Marketing and Distribution Practices
608	Community Resource Planning and Development
703	Nutrition Education and Behavior
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

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

##### External factors which affected outcomes

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

##### Brief Explanation

USDA has Global Food Security as a National priority, and not all the activities needed to support such a goal are addressed through production-oriented teams. One consideration listed in national outcomes is the need for resiliency, and given current global market pressures, pest pressures, supply chain risks (food safety, transportation costs), it would suggest a more diverse set of food production models is needed.

USDA food security priorities also address natural resources and the long-term management of agricultural lands. Long-term land conservation requires some new models of land transitions, since the average age of farmers is in the high 50's and increasing and this team addresses new models of agriculture that may lower barriers to entry into agricultural production.

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

##### Evaluation Results

n/a

##### Key Items of Evaluation

Colorado Food Blue Print Project

## VI. National Outcomes and Indicators

### 1. NIFA Selected Outcomes and Indicators

<b>Childhood Obesity (Outcome 1, Indicator 1.c)</b>	
0	Number of children and youth who reported eating more of healthy foods.
<b>Climate Change (Outcome 1, Indicator 4)</b>	
0	Number of new crop varieties, animal breeds, and genotypes with climate adaptive traits.
<b>Global Food Security and Hunger (Outcome 1, Indicator 4.a)</b>	
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.
<b>Global Food Security and Hunger (Outcome 2, Indicator 1)</b>	
0	Number of new or improved innovations developed for food enterprises.
<b>Food Safety (Outcome 1, Indicator 1)</b>	
0	Number of viable technologies developed or modified for the detection and
<b>Sustainable Energy (Outcome 3, Indicator 2)</b>	
0	Number of farmers who adopted a dedicated bioenergy crop
<b>Sustainable Energy (Outcome 3, Indicator 4)</b>	
0	Tons of feedstocks delivered.