

# 2018 Colorado State University Combined Research and Extension Annual Report of Accomplishments and Results

Status: Accepted

Date Accepted: 08/15/2019

## 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 and in collaboration with 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 fundraising 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 CD as a process rather than an issue. The goal is intentionally to integrate CD 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 in which agriculture and food production play a role.
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, this resource team on Food Systems is 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:

1. Deliver workshops and educational classes for producers;
2. 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:

1. Educating agricultural and resource industry professionals;
2. Researching technical and economic issues related to improved resource utilization;
3. 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: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	150.0	0.0	50.0	0.0
Actual	136.0	0.0	158.9	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 Extension's Strategic Plan, college priorities, resource allocation, and meeting needs of Coloradans.

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 for 2018-2019. Plans of Work were revised, updated, or rolled over for 2019 - 2020. 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. NOTE: Extension will be moving to a different reporting system by Digital Measures. The process is yet young, so it is unclear what changes may be required in the planning processes for Extension.

### 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. Additionally, many AES research centers around the state have advisory committees that provide feedback on program direction. 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; 7) opioid use disorder (OUD) and 8) 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.**

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.

Extension: 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.**

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 all 64 Colorado 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. Field days are also utilized to showcase research onsite. 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.

Extension: Yearly the county advisory committees review the county plans of work which are then incorporated into the statewide PRU plans of work. These plans, updated every two years to reflect local needs, 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. These groups meet f2f and by phone or Zoom to assure programming is targeted to meet local needs.

**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>
{No Data Entered}	{No Data Entered}	{No Data Entered}	{No Data Entered}

<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>	3004904	0	4016880	0
<b>Actual Matching</b>	3004904	0	4016880	0
<b>Actual All Other</b>	0	0	33054590	0
<b>Total Actual Expended</b>	6009808	0	41088350	0

<b>3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous</b>				
<b>Carryover</b>	2431218	0	853632	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: 2018	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	50.0	0.0	0.0	0.0
<b>Actual Paid</b>	68.9	0.0	0.0	0.0
<b>Actual Volunteer</b>	1402.8	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
1343259	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1343259	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

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

1. Brief description of the Activity

- 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**

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	10295	19683	25867	10410

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

**Patent Applications Submitted**

Year: 2018  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2018	Extension	Research	Total
<b>Actual</b>	2	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, and/or other group events.

<b>Year</b>	<b>Actual</b>
2018	6280

**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>
2018	34734

**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>
2018	3039

**Output #4**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	149

**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>
2018	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>
2018	21392

**Output #7**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	95239

**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.

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2018	2435

### **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 Colorado State University's premier youth development program. Positive youth development addresses broader developmental needs of youth, in contrast to deficit-based models which 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.

Therefore, in order to be prepared to succeed in a quickly changing world, our young people need a sense of competence, usefulness, belonging, and power. Studies have shown that youth who have developed these senses are involved in positive group settings and become productive citizens and successful young adults. Also, adolescents who have developed these characteristics appear to be more likely than others to engage in pro-social behavior. 4-H targets critical skills (life skills) that help cultivate these senses.

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

Program delivery is via one of six different delivery methods 1) Organized clubs, 2) School enrichment, 3) Short term/special interest, 4) School-age child care, 5) After school programs, 6) Camping.

?13,035 in organized 4-H Clubs

?113,000 youth enrollment, 8,601 adult volunteer enrollments

#### **Results**

2435 volunteers reported they 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.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

#### 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

Year	Actual
2018	8848

##### 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 Colorado State University's premier youth development program. Positive youth development addresses broader developmental needs of youth, in contrast to deficit-based models which 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.

Therefore, in order to be prepared to succeed in a quickly changing world, our young people need a sense of competence, usefulness, belonging, and power. Studies have shown that youth who have developed these senses are involved in positive group settings and become productive citizens and successful young adults. Also, adolescents who have developed these characteristics appear to be more likely than others to engage in pro-social behavior. 4-H targets

critical skills (life skills) that help cultivate these senses.

**What has been done**

Program delivery is via one of six different delivery methods 1) Organized clubs, 2) School enrichment, 3) Short term/special interest, 4) School-age child care, 5) After school programs, 6) Camping.

?13,035 in organized 4-H Clubs

?113,000 youth enrollment, 8,601 adult volunteer enrollments

**Results**

2032 - Volunteers report an increased leadership capacity in their communities.

1270 - Volunteers report they foster life skill development in the youth in their communities.

2138 - Volunteers report increased effectiveness of Extension programs.

1052 - Volunteers report they contribute to increased public service in their communities.

1066 - Volunteers report they generate a sense of goodwill and social well-being in their communities.

1291 - Volunteers report an increase the social, emotional, and learning skills in the audience with which they work

**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
- 1862 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

### 3b. Quantitative Outcome

Year	Actual
2018	56895

### 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 Colorado State University's premier youth development program. Positive youth development addresses broader developmental needs of youth, in contrast to deficit-based models which 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.

Therefore, in order to be prepared to succeed in a quickly changing world, our young people need a sense of competence, usefulness, belonging, and power. Studies have shown that youth who have developed these senses are involved in positive group settings and become productive citizens and successful young adults. Also, adolescents who have developed these characteristics appear to be more likely than others to engage in pro-social behavior. 4-H targets critical skills (life skills) that help cultivate these senses.

#### What has been done

Program delivery is via one of six different delivery methods 1) Organized clubs, 2) School enrichment, 3) Short term/special interest, 4) School-age child care, 5) After school programs, 6) Camping.

?13,035 in organized 4-H Clubs

?113,000 youth enrollment, 8,601 adult volunteer enrollments

#### Results

4951 - Youth reported they contributed to community improvement

9509 - Youth reported they developed goal-setting skills

9070 - Youth reported they developed decision-making skills

8794 - Youth reported they develops record keeping skills

7729 - Youth report they developed public speaking skills

8382 - Youth report they developed leadership skills

8460 - Youth report they developed responsibility

### 4. Associated Knowledge Areas

**KA Code**    **Knowledge Area**  
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>
2018	4754

**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 Colorado State University's premier youth development program. Positive youth development addresses broader developmental needs of youth, in contrast to deficit-based models which 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.

Therefore, in order to be prepared to succeed in a quickly changing world, our young people need a sense of competence, usefulness, belonging, and power. Studies have shown that youth who have developed these senses are involved in positive group settings and become productive citizens and successful young adults. Also, adolescents who have developed these characteristics appear to be more likely than others to engage in pro-social behavior. 4-H targets critical skills (life skills) that help cultivate these senses.

**What has been done**

Program delivery is via one of six different delivery methods 1) Organized clubs, 2) School enrichment, 3) Short term/special interest, 4) School-age child care, 5) After school programs, 6) Camping.

?13,035 in organized 4-H Clubs

?113,000 youth enrollment, 8,601 adult volunteer enrollments

**Results**

4754 Colorado youth report they apply STEM knowledge and skills in club, community and academic projects and programs.

**4. Associated Knowledge Areas**

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

<b>Year</b>	<b>Actual</b>
2018	3257

**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 Colorado State University's premier youth development program. Positive youth development addresses broader developmental needs of youth, in contrast to deficit-based models which 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.

Therefore, in order to be prepared to succeed in a quickly changing world, our young people need a sense of competence, usefulness, belonging, and power. Studies have shown that youth who have developed these senses are involved in positive group settings and become productive citizens and successful young adults. Also, adolescents who have developed these characteristics appear to be more likely than others to engage in pro-social behavior. 4-H targets critical skills (life skills) that help cultivate these senses.

**What has been done**

Program delivery is via one of six different delivery methods 1) Organized clubs, 2) School enrichment, 3) Short term/special interest, 4) School-age child care, 5) After school programs, 6) Camping.

?13,035 in organized 4-H Clubs

?113,000 youth enrollment, 8,601 adult volunteer enrollments

**Results**

3257 K-12 Youth report they apply content knowledge from 4-H to new situations

**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
2018	26189

**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 Colorado State University's premier youth development program. Positive youth development addresses broader

developmental needs of youth, in contrast to deficit-based models which 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.

Therefore, in order to be prepared to succeed in a quickly changing world, our young people need a sense of competence, usefulness, belonging, and power. Studies have shown that youth who have developed these senses are involved in positive group settings and become productive citizens and successful young adults. Also, adolescents who have developed these characteristics appear to be more likely than others to engage in pro-social behavior. 4-H targets critical skills (life skills) that help cultivate these senses.

**What has been done**

Program delivery is via one of six different delivery methods 1) Organized clubs, 2) School enrichment, 3) Short term/special interest, 4) School-age child care, 5) After school programs, 6) Camping.

?13,035 in organized 4-H Clubs

?113,000 youth enrollment, 8,601 adult volunteer enrollments

**Results**

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

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

655 - Youth report they will demonstrate value and respect for other cultures.

540 - Youth report they will engage in civic involvement.

2917 - Youth participate in community service and volunteer.

3865 - Youth report they will demonstrate leadership efficacy.

363 - Youth report they will maintain future intentions for civic engagement.

3804 - Youth demonstrate their ability to work effectively in teams.

580 - Youth report they will improve their knowledge of parliamentary procedure.

232 - Youth report they will increase their interactions with local, state, and national government.

270 - Youth report they will intend to vote.

**4. Associated Knowledge Areas**

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

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

### **Evaluation Results**

- Provided Colorado 4-H Shooting Sports agents training on how to manage and implement a safe and successful 4-H Shooting Sports program; developed a 4-H horse safety and care program for 4-H agents.
- The success of STEM grants is leading to new programming including youth mentoring, career pathway development and youth disaster preparedness initiatives.
- New and revised curriculum added to the State 4-H Program also includes the 4-H Horse Manual, Home Design, and Computer Science; implemented statewide 4-H volunteer orientation.
- The STEM Trailer program, available to all Colorado 4-H agents, is expanding and has been updated with new programming to include Maker activities including electricity, computer science, rocketry, robotics and physical science

### **Key Items of Evaluation**

4-H grows young people with essential life skills like confidence, courage, resilience and curiosity who are empowered and prepared for life today and tomorrow. Demand for youth programming in both rural and urban communities can be challenging and Colorado 4-H serves every county through Colorado State University and the Extension system to provide access to all. Colorado 4-H has provided more STEM opportunities to all counties, updated existing programming within Shooting Sports, and has revised and created new curriculum to many categories within the Colorado 4-H and National 4-H system.

**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	40%		0%	
802	Human Development and Family Well-Being	40%		0%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	10%		0%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	10%		100%	
	<b>Total</b>	100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	5.0	0.0	0.0	0.0
<b>Actual Paid</b>	3.0	0.0	0.0	0.0
<b>Actual Volunteer</b>	0.1	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
67929	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
67929	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

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

**1. Brief description of the Activity**

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**

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	715	826	10	0

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

**Patent Applications Submitted**

Year: 2018

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

<b>2018</b>	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Actual</b>	3	1	4

**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, and/or other group events.

<b>Year</b>	<b>Actual</b>
2018	198

**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>
2018	42

**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>
2018	25

**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>
2018	172

**Output #5**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	13

**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>
2018	1507

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

1507 Participants across the lifecycle report they will apply financial best practices.

**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**

<b>Year</b>	<b>Actual</b>
2018	1934

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

1934 participants report they plan to apply financial best practices.

**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**

<b>Year</b>	<b>Actual</b>
2018	866

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

866 participants report they will implement best practices of healthy development and relationships across the lifecycle.

**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.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2018	423

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

423 participants report they will plan to implement best practices of healthy development and relationships across the lifecycle.

**4. Associated Knowledge Areas**

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

**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**

n/a

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

**Evaluation Results**

.

**Key Items of Evaluation**

.

**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
701	Nutrient Composition of Food	0%		40%	
703	Nutrition Education and Behavior	30%		0%	
704	Nutrition and Hunger in the Population	5%		10%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	5%		0%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	30%		10%	
724	Healthy Lifestyle	30%		40%	
<b>Total</b>		100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	45.0	0.0	2.0	0.0
<b>Actual Paid</b>	13.2	0.0	7.0	0.0
<b>Actual Volunteer</b>	2.8	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
271167	0	436867	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
271167	0	436867	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	3594945	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.

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, 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 and 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**

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	4305	10733	254	0

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

**Patent Applications Submitted**

Year: 2018

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2018	Extension	Research	Total
<b>Actual</b>	9	15	24

**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, and/or other group events.

Year	Actual
2018	727

**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>
2018	1439

**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>
2018	184

**Output #4**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	16

**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>
2018	2

**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>
2018	751

**Output #7**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	393552

**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>
2018	1472

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

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

Adoption of healthful eating and activity patterns can enhance the overall health and wellbeing of children, youth, adults, and the growing senior population.

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

Through various programs, CSU Extension contributes to statewide efforts to increase fruit and vegetable consumption, increase physical activity, and decrease overweight/obesity risk in Colorado.

#### **Results**

1472 Coloradans reported an intention to eat more of healthy foods.

### **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
2018	853

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

**Issue (Who cares and Why)**

Adoption of healthful eating and activity patterns can enhance the overall health and wellbeing of children, youth, adults, and the growing senior population.

**What has been done**

Through various programs, CSU Extension contributes to statewide efforts to increase fruit and vegetable consumption, increase physical activity, and decrease overweight/obesity risk in Colorado.

**Results**

853 Coloradans reported eating more of healthy foods.

**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.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2018	506

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

**Issue (Who cares and Why)**

Adoption of healthful eating and activity patterns can enhance the overall health and wellbeing of children, youth, adults, and the growing senior population.

**What has been done**

Through various programs, CSU Extension contributes to statewide efforts to increase fruit and vegetable consumption, increase physical activity, and decrease overweight/obesity risk in Colorado.

**Results**

506 Coloradans reported an intention to eat less of foods/food components which are commonly eaten in excess.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
703	Nutrition Education and Behavior

**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**

Year	Actual
2018	85

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

Adoption of healthful eating and activity patterns can enhance the overall health and wellbeing of children, youth, adults, and the growing senior population.

#### What has been done

#### Results

80 Coloradans reported eating less of foods/food components which are commonly eaten in excess.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
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.

#### 2. Associated Institution Types

- 1862 Extension

#### 3a. Outcome Type:

Change in Action Outcome Measure

#### 3b. Quantitative Outcome

Year	Actual
2018	388

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

Adoption of healthful eating and activity patterns can enhance the overall health and wellbeing of children, youth, adults, and the growing senior population.

#### What has been done

Through various programs, CSU Extension contributes to statewide efforts to increase fruit and vegetable consumption, increase physical activity, and decrease overweight/obesity risk in Colorado.

#### Results

388 Coloradans reported an intention to increase their physical activity and/or reducing sedentary time.

**4. Associated Knowledge Areas**

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

**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>
2018	348

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

**Issue (Who cares and Why)**

Adoption of healthful eating and activity patterns can enhance the overall health and wellbeing of children, youth, adults, and the growing senior population.

**What has been done**

Through various programs, CSU Extension contributes to statewide efforts to increase fruit and vegetable consumption, increase physical activity, and decrease overweight/obesity risk in Colorado.

**Results**

348 Coloradans reported increasing their physical activity, reducing sedentary time, and/or meeting the recommended amount of physical activity.

**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.

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2018	2123

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

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

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).

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

CSU Extension contributes to statewide efforts in decreasing incidence of foodborne illness through direct and indirect education of consumers, food managers and workers, food growers, farmers? market managers, cottage food entrepreneurs, health professionals, caretakers and others.

#### **Results**

2123 participants will reported intent to adopt recommended food safety practices related to safe food production, processing, transport, preparation, preservation, consumption and/or food storage.

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

<b>KA Code</b>	<b>Knowledge Area</b>
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

## **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.

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

- 1862 Extension

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

Change in Knowledge Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2018	1279

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

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

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).

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

CSU Extension contributes to statewide efforts in decreasing incidence of foodborne illness through direct and indirect education of consumers, food managers and workers, food growers, farmers? market managers, cottage food entrepreneurs, health professionals, caretakers and others.

#### **Results**

1279 participants reported they will be adopting a learned food safety practice, such as safe food preservation techniques, food or refrigerator thermometer usage, proper sanitizing of food contact surfaces, safe methods of food thawing, heating or cooling, having pressure canner gauge tested for accuracy or other appropriate measures of food safety.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources

#### 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.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Knowledge Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2018	1180

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

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

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).

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

CSU Extension contributes to statewide efforts in decreasing incidence of foodborne illness through direct and indirect education of consumers, food managers and workers, food growers, farmers? market managers, cottage food entrepreneurs, health professionals, caretakers and others.

###### **Results**

1180 Participants reported they gained knowledge necessary to apply food safety principles in a work-related setting and to teach these principles to others.

#### 4. Associated Knowledge Areas

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

## Naturally Occurring Toxins

### 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

n/a

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

#### Evaluation Results

- Completed assessment of nutrition and food safety websites to determine the need for updates
- Gathered user-input and developed a new, mobile responsive, food-centered website with updates to improve user-friendliness, search engine rankings, and time management for users and developers
  - Launched Preserve Smart, a food preservation app
  - Trained over 735 individuals on Cottage Food Safety with a 100% pass rate
  - Delivered the Mediterranean Diet Pilot Workshop to 197 participants
    - One month out, participants (n=69) reported that as a result of the program, they now include more fruits and vegetables (72%), more olive oil (59%), other protein sources more often than red meat (70%), and less processed foods (84%) in their diet.
    - Administered three Diabetes Coalition Webinars, reaching a total of 52 participants
      - Respondents agreed/strongly agreed (94%) they have increased awareness and/or understanding of the main objectives of the webinars
- Delivered A Healthier Weigh, a health and fitness challenge program in Northeast Colorado counties, to 138 participants
  - Participants (n=42) reported losing on average 3.8% body weight.
  - Master Food Safety Advisor Training

#### Key Items of Evaluation

- Trained over 735 individuals on Cottage Food Safety with a 100% pass rate
- Delivered the Mediterranean Diet Pilot Workshop to 197 participants
  - One month out, participants (n=69) reported that as a result of the program, they

now include more fruits and vegetables (72%), more olive oil (59%), other protein sources more often than red meat (70%), and less processed foods (84%) in their diet.

**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%		25%	
301	Reproductive Performance of Animals	0%		20%	
302	Nutrient Utilization in Animals	0%		20%	
303	Genetic Improvement of Animals	0%		10%	
307	Animal Management Systems	50%		10%	
315	Animal Welfare/Well-Being and Protection	0%		5%	
601	Economics of Agricultural Production and Farm Management	0%		10%	
	<b>Total</b>	100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	13.0	0.0	7.0	0.0
<b>Actual Paid</b>	5.9	0.0	11.8	0.0
<b>Actual Volunteer</b>	0.1	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
132362	0	733986	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
132362	0	733986	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	6039912	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**

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	2995	1186	195	3

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

**Patent Applications Submitted**

Year: 2018

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2018	Extension	Research	Total
Actual	9	19	28

**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, and/or other group events.

Year	Actual
2018	231

**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
2018	1418

**Output #3**

**Output Measure**

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

Year	Actual
2018	114

**Output #4**

**Output Measure**

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

Year	Actual
2018	5

**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>
2018	19

**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>
2018	8889

**Output #7**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	11443

**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>
2018	724

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

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

In 2012, the National Ag Census ranked Colorado as 5th in the nation for value of cattle and calves (\$4.3 billion) which is over half of the total market value of agricultural products sold in Colorado. During the same period, Colorado ranked 3rd in the nation for sheep, goats, wool, mohair, and milk sales (\$87 million).

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

Fostered peer-to-peer learning among ranchers through several ranch gatherings through a partnership with Colorado Cattleman's Association and Colorado Cattleman's Agricultural Land Trust.

#### **Results**

724 livestock and rangeland managers reported they applied newly gained information, technology, or skills to improve animal health and/or animal production.

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

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

<b>Year</b>	<b>Actual</b>
2018	103

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

**Issue (Who cares and Why)**

Rangeland and livestock are among the most important agricultural resources in the state.

**What has been done**

**Results**

103 Livestock and rangeland managers reported they applied newly gained information, technology, or skills to improve rangeland health.

**4. Associated Knowledge Areas**

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

<b>Year</b>	<b>Actual</b>
2018	957

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

**Issue (Who cares and Why)**

The Livestock and Range (L&R) Reporting Unit strives for rangeland health, improved animal health and production, industry policy and regulation awareness, and economic sustainability using a broad array of methodologies that provide information, skills, and technology to producers and L&R Unit members.

**What has been done**

Helped ranchers and farmers reduce risk and create resilient businesses through Lasting Legacy workshops, Ag Outlook and Strategy Forums, Financial Management Strategies events, and an Ag Marketing Lunch and Learn, all organized by the Agriculture and Business Management team.

**Results**

957 livestock and rangeland managers reported they applied newly gained information, technology, or skills to improve economic sustainability.

**4. Associated Knowledge Areas**

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

<b>Year</b>	<b>Actual</b>
2018	75

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

**Issue (Who cares and Why)**

There are over 30,000 farms and ranches in Colorado consisting of over 30,000,000 acres of agricultural land (land in farms and ranches), 46% of the state's total land area of 66.3 million acres. Colorado's agricultural industry has lost nearly 2 million acres of agricultural land over the last ten years. Agricultural land in Colorado is being converted in three primary ways: urban and built up lands, low density non-agricultural rural land, and public open lands. As we continue to lose acres of agricultural land, we also continue to have fewer days spent working on the farm or ranch. 38.5% of operators worked 200 days or more off the farm or ranch.

**What has been done**

Members of the Livestock and Range PRU work closely with animal agriculture and range industry and professionals to determine program goals and objectives. The animal agriculture industry provides valuable partnership opportunities and helps evaluate and expand the scope of the Colorado State University Livestock and Range PRU.

**Results**

75 livestock and rangeland managers reported they developed/wrote a management plan (i.e. grazing plan, feeding plan, drought plan, business plan, etc...).

**4. Associated Knowledge Areas**

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

<b>Year</b>	<b>Actual</b>
2018	16473

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

16473 animals' health/production were affected/improved.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
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>
2018	35590

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

Rangeland health was reported affected/improved on 35,590 acres.

**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>
2018	608

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

608 livestock and rangeland managers reported they applied newly gained information in their decision making process for following or developing new industry policies and regulations.

**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>
2018	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**

The Livestock and Range (L&R) Reporting Unit strives for rangeland health, improved animal health and production, industry policy and regulation awareness, and economic sustainability using a broad array of methodologies that provide information, skills, and technology to producers and L&R Unit members. However, due to recent droughts, economic challenges, and new pressures, livestock producers face challenges in their efforts to be economically, ecological, and socially sustainable. In 2019, the Livestock and Range PRU plans to address these challenges through new workshops and programs in risk management, performance analysis, and drought recovery and preparation.

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

### **Evaluation Results**

Ranchers in Colorado manage complex business enterprises, and also must manage for rangeland health, wildlife habitat, and often increased recreation and scrutiny on public lands as demographics continue to change in Colorado. In a partnership with the USDA Climate Hub, the Livestock and Range PRU created videos and an interactive fact sheet exploring successful partnerships among ranchers, environmentalists, scientists and agencies. See the fact sheet here, and our video on the Learning from the Land Project and the Collaborative Adaptive Rangeland Management experiment. With these outreach materials, we seek to raise the visibility of efforts that can lead to better outcomes for ranchers, rangelands, wildlife and citizens in Colorado.

### **Key Items of Evaluation**

Responded to the 2018 drought by hosting several "Preparing for drought" workshops in western Colorado in the spring of 2018, and two "Surviving drought" workshops in August 2018 in cooperation with the USDA Climate Hubs. See the report on the preparing for the drought workshops at <https://rangemanagement.extension.colostate.edu/csu-range-school-drought-workshops-report-may-2018/>

**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%		25%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		13%	
202	Plant Genetic Resources	0%		2%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		7%	
204	Plant Product Quality and Utility (Preharvest)	0%		1%	
205	Plant Management Systems	0%		7%	
206	Basic Plant Biology	0%		2%	
211	Insects, Mites, and Other Arthropods Affecting Plants	0%		18%	
213	Weeds Affecting Plants	0%		12%	
215	Biological Control of Pests Affecting Plants	0%		7%	
216	Integrated Pest Management Systems	35%		2%	
601	Economics of Agricultural Production and Farm Management	7%		2%	
603	Market Economics	0%		2%	
	<b>Total</b>	100%		100%	

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

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

Year: 2018	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	15.0	0.0	26.0	0.0
<b>Actual Paid</b>	10.7	0.0	25.2	0.0
<b>Actual Volunteer</b>	3.0	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
240542	0	1568898	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
240542	0	1568898	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	12910336	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.
- Communicate research and variety trial results through websites, technical bulletins and other media.
- Utilize demonstration plots, variety trials 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**

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	2368	11257	10	0

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

**Patent Applications Submitted**

Year: 2018

Actual: 5

**Patents listed**

- 201800521 Breck hard white winter wheat variety
- 201800522 Incline AX hard red winter wheat
- 201800523 LCS Fusion hard red winter wheat
- PV 201700230 StayBright slow darkening pinto bean
- PV 201700231 Sundance slow darkening pinto bean

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

**Number of Peer Reviewed Publications**

2018	Extension	Research	Total
Actual	16	102	118

**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, and/or other group events.

Year	Actual
2018	211

**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
2018	973

**Output #3**

**Output Measure**

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

Year	Actual
2018	138

**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>
2018	85

**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>
2018	181

**Output #7**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	185821

**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>
2018	208

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

**Issue (Who cares and Why)**

It is the goal of this 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.

**What has been done**

5 state Extension Roundtable hosted in March. Included Extension Agronomists from Colorado, Wyoming, Nebraska, Kansas, and Texas. Informal polling indicated this group would like to continue meeting.

Participated on the planning committee for the International Millet Symposium, Ft. Collins, Co. Planted and harvested approximately 25 COFT wheat trials in Eastern Colorado. This program evaluates CSU wheat varieties for adaptation on Eastern Colorado farms.

Conducted a Pest Sweep program. This pesticide collection program has ?harvested? approximately 5000 pounds of hazardous waste.

**Results**

208 participants reported they applied 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.

#### 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
2018	162

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

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

It is the goal of this 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.

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

5 state Extension Roundtable hosted in March. Included Extension Agronomists from Colorado, Wyoming, Nebraska, Kansas, and Texas. Informal polling indicated this group would like to continue meeting.

Participated on the planning committee for the International Millet Symposium, Ft. Collins, Co. Planted and harvested approximately 25 COFT wheat trials in Eastern Colorado. This program evaluates CSU wheat varieties for adaptation on Eastern Colorado farms.

Conducted a Pest Sweep program. This pesticide collection program has ?harvested? approximately 5000 pounds of hazardous waste.

**Results**

162 participants reported they 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.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
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>
2018	44

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

**Issue (Who cares and Why)**

It is the goal of this 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.

**What has been done**

This PRU partners with private industry and other PRU government entities (such as NRCS) to facilitate our programming. The partnerships as well as registration fees allow programming dollars to better enhance our projects.

**Results**

44 participants reported they wrote estate & farm transition plans with the intent to transfer farm management & eventual ownership to subsequent generations inside or outside families.

#### 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
2018	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
2018	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
205	Plant Management Systems
206	Basic Plant Biology

## **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 Cropping Systems PRU has assisted Colorado agricultural producers with cropping choices and strategies employing a "systems" approach. This is accomplished using a variety of tools that include on-farm crops testing, field days, and winter educational programming. The on-farm testing is successful due to producers willing to donate land and labor to facilitate the generation of new cropping information. In addition, consumers of our information are willing to pay to attend many of the winter programming events such as the Crops Clinic. They view the investment of land, labor, and registration costs as positive investments. Further, this PRU partners with private industry and other government entities (such as NRCS) to facilitate our programming. The partnerships as well as registration fees allow programming dollars to better enhance our projects.

n/a

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

### **Evaluation Results**

n/a

### **Key Items of Evaluation**

n/a

**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
101	Appraisal of Soil Resources	0%		20%	
102	Soil, Plant, Water, Nutrient Relationships	20%		5%	
103	Management of Saline and Sodic Soils and Salinity	0%		5%	
111	Conservation and Efficient Use of Water	20%		25%	
112	Watershed Protection and Management	0%		10%	
121	Management of Range Resources	0%		5%	
123	Management and Sustainability of Forest Resources	0%		5%	
132	Weather and Climate	0%		5%	
205	Plant Management Systems	25%		0%	
216	Integrated Pest Management Systems	15%		0%	
307	Animal Management Systems	20%		0%	
403	Waste Disposal, Recycling, and Reuse	0%		15%	
605	Natural Resource and Environmental Economics	0%		5%	
	<b>Total</b>	100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	12.0	0.0	11.0	0.0
<b>Actual Paid</b>	11.7	0.0	11.1	0.0
<b>Actual Volunteer</b>	1.3	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
261555	0	691066	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
261555	0	691066	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	5686730	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**

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	11250	3234	2610	50

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

**Patent Applications Submitted**

Year: 2018

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2018	Extension	Research	Total
Actual	1	27	28

**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, and/or other group events.

Year	Actual
2018	739

**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
2018	630

**Output #3**

**Output Measure**

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

Year	Actual
2018	46

**Output #4**

**Output Measure**

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

Year	Actual
2018	61

**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>
2018	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>
2018	101

**Output #7**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	57791

**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>
2018	728

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

**Issue (Who cares and Why)**

According to the Colorado Climate Center, statewide average annual precipitation is only 17 inches, with many areas receiving much less. Sustainable landscapes using site-appropriate native plants can reduce the need for water and maintenance.

**What has been done**

Across Colorado staff had one-on-one contact with 3,330 stakeholders of those 7,621 were adults and 433 were youth.

628 resource kits were loaned out to stakeholders

193 meetings were facilitated discussing issues in Natural Resources.

Information from our website reached 117,571 people throughout Colorado.

**Results**

728 participants reported they implemented or intend to implement actions related to water quality and quantity issues.

**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>
2018	1149

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

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

The Natural Resources PRU is focused on how to best 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

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

Across Colorado staff had one-on-one contact with 3,330 stakeholders of those 7,621 where adults and 433 where youth.

628 resource kits where loaned out to stakeholders

193 meetings where facilitated discussing issues in Natural Resources.

Information from our website reached 117,571 people throughout Colorado.

#### **Results**

1149 participants reported they implemented or planned to implement animal/wildlife-related conservation practices.

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

<b>KA Code</b>	<b>Knowledge Area</b>
111	Conservation and Efficient Use of Water
307	Animal Management Systems

**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**

<b>Year</b>	<b>Actual</b>
2018	835

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

**Issue (Who cares and Why)**

The Natural Resources PRU is focused on how to best 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

**What has been done**

Across Colorado staff had one-on-one contact with 3,330 stakeholders of those 7,621 where adults and 433 where youth.

628 resource kits where loaned out to stakeholders

193 meetings where facilitated discussing issues in Natural Resources.

Information from our website reached 117,571 people throughout Colorado.

**Results**

835 participants reported they implemented or intended to implement soil-related conservation practices.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
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>
2018	1579

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

**Issue (Who cares and Why)**

The Natural Resources PRU is focused on how to best 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

**What has been done**

Across Colorado staff had one-on-one contact with 3,330 stakeholders of those 7,621 where adults and 433 where youth.  
628 resource kits where loaned out to stakeholders  
193 meetings where facilitated discussing issues in Natural Resources.  
Information from our website reached 117,571 people throughout Colorado.

**Results**

1570 participants reported they implemented or intend to implement plant-related conservation practices.

**4. Associated Knowledge Areas**

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

<b>Year</b>	<b>Actual</b>
2018	424

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

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

The Natural Resources PRU is focused on how to best 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

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

Across Colorado staff had one-on-one contact with 3,330 stakeholders of those 7,621 where adults and 433 where youth.

628 resource kits were loaned out to stakeholders

193 meetings were facilitated discussing issues in Natural Resources.

Information from our website reached 117,571 people throughout Colorado.

#### **Results**

424 participants reported they improved 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.

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

<b>KA Code</b>	<b>Knowledge Area</b>
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>
2018	55361

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

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

Landowners/managers who own/manage one to 100 acres embrace the rural lifestyle but do not necessarily intend to derive income from the property. According to the USDA ERS (Economic Research Service) 2007 census data, 48.5% of Colorado farms are 1-99 acres in size. The number of small farms (1-99 acres in size) has increased by 7.7% since 1997.

The 2007 US Census of Agriculture classifies 36.4% of small farms (1-100 acres) as Residential/Lifestyle properties in which operators report major non-farming occupations. Placing rural agricultural land into the hands of many diverse owners has created a new educational challenge for Extension.

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

Across Colorado staff had one-on-one contact with 3,330 stakeholders of those 7,621 where adults and 433 where youth.

628 resource kits were loaned out to stakeholders

193 meetings were facilitated discussing issues in Natural Resources.

Information from our website reached 117,571 people throughout Colorado.

#### **Results**

participants reported 55,361 acres were impacted by weed management, planting natives, fire mitigation, pasture grasses, etc.

### **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>
2018	25000

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

**Issue (Who cares and Why)**

The Natural Resources PRU is focused on how to best 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

**What has been done**

?Across Colorado staff had one-on-one contact with 3,330 stakeholders of those 7,621 where adults and 433 where youth.

?628 resource kits where loaned out to stakeholders

?193 meetings where facilitated discussing issues in Natural Resources.

?Information from our website reached 117,571 people throughout Colorado.

**Results**

\$25,000 Dollars were reported saved by best management practices

**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**

Year	Actual
2018	400338

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

**Issue (Who cares and Why)**

The Natural Resources 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.

**What has been done**

Across Colorado staff had one-on-one contact with 3,330 stakeholders of those 7,621 where adults and 433 where youth.

628 resource kits where loaned out to stakeholders

193 meetings where facilitated discussing issues in Natural Resources.

Information from our website reached 117,571 people throughout Colorado.

**Results**

\$40,039 were received in grant funding for Natural Resource projects.

**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
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**

Year	Actual
2018	275

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

**Issue (Who cares and Why)**

The Natural Resources 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.

**What has been done**

Across Colorado staff had one-on-one contact with 3,330 stakeholders of those 7,621 where adults and 433 where youth.

628 resource kits where loaned out to stakeholders

193 meetings where facilitated discussing issues in Natural Resources.

Information from our website reached 117,571 people throughout Colorado.

**Results**

\$275 was collected in user fees to help offset programming costs.

**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
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**

<b>Year</b>	<b>Actual</b>
2018	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>
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
132	Weather and Climate
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**

n/a

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

### **Evaluation Results**

We are focused on forest health and defensible space, small acreage management, water and soil health, native plant initiatives, wildlife education; youth outreach opportunities and citizen science climate-smart initiatives. Climate smart initiatives are the most recent undertaking where we work across boundaries to help clients with decision-making tools on such issues as new tree/shrub varieties, native grass/forbs species, drought and fire concerns, changing migrations and wildlife patterns and emerging noxious weed issues.

### **Key Items of Evaluation**

#### **For More Information**

Please visit our website at <https://extension.colostate.edu/topic-areas/natural-resources/>

**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%		20%	
605	Natural Resource and Environmental Economics	0%		60%	
608	Community Resource Planning and Development	100%		20%	
	<b>Total</b>	100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	1.0	0.0	3.0	0.0
<b>Actual Paid</b>	9.2	0.0	0.0	0.0
<b>Actual Volunteer</b>	2.4	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
205417	0	0	0
<b>1862 Matching</b>	<b>1890 Matching</b>	<b>1862 Matching</b>	<b>1890 Matching</b>
205417	0	0	0
<b>1862 All Other</b>	<b>1890 All Other</b>	<b>1862 All Other</b>	<b>1890 All Other</b>
0	0	0	0

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

**1. Brief description of the Activity**

- 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**

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	5641	9653	10	0

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

**Patent Applications Submitted**

Year: 2018  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

<b>2018</b>	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Actual</b>	1	10	11

**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, and/or other group events..

<b>Year</b>	<b>Actual</b>
2018	370

**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>
2018	8062

**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>
2018	500

**Output #4**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	27

**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>
2018	1273

**Output #6**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	597

**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>
2018	756

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

756 community members report engaging in community and economic development planning and action.

**4. Associated Knowledge Areas**

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

Year	Actual
2018	276

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

276 community plans are developed.

**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**

Year	Actual
2018	5

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

Five community plans are implemented.

**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>
2018	5

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

Five entrepreneurs reported they initiated new ventures.

**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>
2018	619

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

619 businesses, non-profits, agencies, and community members reported increasing links to resources and community assets.

**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>
2018	75

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

75 community members reported increased engagement in community and/or organization through new leadership opportunities.

**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**

n/a

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

**Evaluation Results**

n/a

**Key Items of Evaluation**

n/a

**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
133	Pollution Prevention and Mitigation	50%		100%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	50%		0%	
	<b>Total</b>	100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	2.5	0.0	0.0	0.0
<b>Actual Paid</b>	1.5	0.0	0.0	0.0
<b>Actual Volunteer</b>	0.1	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
33225	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
33225	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

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

1. Brief description of the Activity

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**

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	390	495	0	0

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

**Patent Applications Submitted**

Year: 2018  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2018	Extension	Research	Total
<b>Actual</b>	0	2	2

**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, and/or other group events.

**Year                      Actual**

2018 41

**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>
2018	113

**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>
2018	26

**Output #4**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	40

**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>
2018	0

**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>
2018	125

**Output #7**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	31092

**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>
2018	216

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

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

Local governments across Colorado are becoming more interested in opportunities to save money, increase sustainability, and achieve community energy goals. Some communities have set bold renewable energy targets, while others simply want to reduce their energy bills. A vast array of energy programs and funding opportunities exist that can help local governments move forward however they see fit. CSU Extension's Local Government Energy Academy workshop provided a high-level overview of energy options in Colorado as well as deep dives into what local governments can do today to impact both their operations and the broader community.

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

Coordinated an inaugural Local Government Energy Academy to help local governments identify, prioritize, and implement cost-effective sustainable energy measures  
Assessed the economic feasibility of solar energy on irrigated farms and feedlots  
Conducted workshops on home energy efficiency and solar energy to help households understand the cost-benefit of energy options  
Facilitated Xcel Energy's Partners in Energy Program to develop and implement sustainable energy strategies in three Denver metro cities

#### **Results**

216 participants reported they implemented or intend to implement cost-effective sustainable energy measures.

### **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.

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

- 1862 Extension

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

Change in Knowledge Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2018	655

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

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

Local governments across Colorado are becoming more interested in opportunities to save money, increase sustainability, and achieve community energy goals. Some communities have set bold renewable energy targets, while others simply want to reduce their energy bills. A vast array of energy programs and funding opportunities exist that can help local governments move forward however they see fit. CSU Extension's Local Government Energy Academy workshop provided a high-level overview of energy options in Colorado as well as deep dives into what local governments can do today to impact both their operations and the broader community.

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

Coordinated an inaugural Local Government Energy Academy to help local governments identify, prioritize, and implement cost-effective sustainable energy measures

Assessed the economic feasibility of solar energy on irrigated farms and feedlots

Conducted workshops on home energy efficiency and solar energy to help households understand the cost-benefit of energy options

Facilitated Xcel Energy's Partners in Energy Program to develop and implement sustainable energy strategies in three Denver metro cities

#### **Results**

655 participants reported increased understanding of sustainable energy measure costs and benefits.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

#### Outcome #3

##### 1. Outcome Measures

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

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

The mission of CSU Extension's energy team is to facilitate sustainable energy decisions. Since the cost of solar energy has dropped dramatically in recent years, the team continued to educate farmers and households about solar options. We developed new resources to meet a burgeoning interest in sustainable energy by local governments. And since the state of Colorado is funding electric vehicle infrastructure and offering rebates for the purchase of EVs, we are boosting our efforts to educate the public about EVs. CSU Extension's energy team will continue to provide resources to a variety of energy stakeholders as issues emerge in this rapidly changing field.

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

##### Evaluation Results

30,000+ view on our energy web pages  
40 education events with over 1,500 participants  
470 solar assessments conducted via our online solar calculator

##### Key Items of Evaluation

95% of evaluated participants in CSU Extension energy program reported they increased their understanding of cost-effective sustainable energy options.

**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%		0%	
111	Conservation and Efficient Use of Water	35%		100%	
216	Integrated Pest Management Systems	35%		0%	
	<b>Total</b>	100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	23.0	0.0	0.0	0.0
<b>Actual Paid</b>	15.9	0.0	5.5	0.0
<b>Actual Volunteer</b>	35.3	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
354506	0	347102	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
354506	0	347102	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	2856277	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**

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	11803	6090	679	400

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

**Patent Applications Submitted**

Year: 2018  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2018	Extension	Research	Total
<b>Actual</b>	14	0	14

**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, and/or other group events.

**Year**                      **Actual**  
 2018                              1762

**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>
2018	24311

**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>
2018	506

**Output #4**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	399

**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>
2018	43

**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>
2018	1608

**Output #7**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	419440

**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>
2018	1330

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

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

The outreach efforts of the Environmental Horticulture 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.

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

One of the biggest CMG outreach efforts was at the Colorado Garden and Home Show, which had 49,250 attendees! Many attendees stopped by to talk with a Master Gardener and learn about Colorado gardening practices at the educational booth.

#### **Results**

1330 participants reported 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.

### **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>
2018	539

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

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

The outreach efforts of the Environmental Horticulture 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.

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

One of the biggest CMG outreach efforts was at the Colorado Garden and Home Show, which had 49,250 attendees! Many attendees stopped by to talk with a Master Gardener and learn about Colorado gardening practices at the educational booth.

#### **Results**

539 participants reported 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.

### **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>
2018	353

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

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

Colorado Master Gardener volunteers assist Colorado State University Extension staff in delivering research-based gardening information to foster successful gardening in Colorado communities.

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

One example: In Arapahoe County, CMG volunteers conduct horticulture therapy programs at two community medical facilities. In 2018, 448 volunteer hours were spent serving citizens with disabilities. Volunteers receive additional training to effectively work with patients to foster their interest in gardening. Master Gardener volunteers provide gardening knowledge to staff and help patients learn to use adaptive tools to support their gardening endeavors. Therapeutic recreation programs like gardening are integral to the rehabilitation process for patients.

##### **Results**

As a result of CMG training and on-going support, 353 CMGs report increased competence (confidence and proficiency/accuracy) in educating the public.

#### **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**

n/a

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

#### **Evaluation Results**

1,364 Colorado Master Gardeners had a statewide financial impact of \$1.449 million.  
CMGs volunteered over 54,000 hours in 32 counties.

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

How CMG spent their time:  
One-on-one consultations 26.1%  
Community Greening 25.7%  
Media 3.6%  
Presentations 8.8%  
Clinics & Booths 24.2%  
Program support 8.5%  
Youth gardening and education 3.1%

**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%		25%	
604	Marketing and Distribution Practices	20%		0%	
608	Community Resource Planning and Development	35%		25%	
703	Nutrition Education and Behavior	5%		50%	
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: 2018	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	4.0	0.0	1.0	0.0
<b>Actual Paid</b>	4.2	0.0	3.8	0.0
<b>Actual Volunteer</b>	0.1	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
94942	0	238961	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
94942	0	238961	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	1966390	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. Also, 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**

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	657	2060	0	0

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

**Patent Applications Submitted**

Year: 2018

Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2018	Extension	Research	Total
Actual	11	10	21

**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, and/or other group events.

Year	Actual
2018	374

**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
2018	669

**Output #3**

**Output Measure**

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

Year	Actual
2018	194

**Output #4**

**Output Measure**

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

Year	Actual
2018	3

**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>
2018	4

**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>
2018	211

**Output #7**

**Output Measure**

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

<b>Year</b>	<b>Actual</b>
2018	13

**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.

Not Reporting on this Outcome Measure

### **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.

Not Reporting on this Outcome Measure

### **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.

Not Reporting on this Outcome Measure

### **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**

Due to a systems error, no outcomes data are reported into our Colorado Planning and Reporting System in 2018 for this Planning and Reporting Unit. Please see "evaluation" section for text describing work and results.

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

#### **Evaluation Results**

##### **Program Highlights**

- Policy analysis: involved putting the Colorado Blueprint for Food and Ag into action by studying food and beverage industry; exploring how Denver Food Vision can provide

opportunities for producers in rural areas; and understanding what state policies and laws facilitate or impede business development for ag and food businesses.

- Expanded programming: Beekeeper professional development program (eight-week class including mentorship and volunteer development) in Chaffee County, now in its third year. Instructional topics include bee biology and colony activities; equipment needs for getting started; apiary sites and how to obtain and install your bees; diseases and pests of honey bees and management options; seasonal management objectives for hive health and longevity.
- New applied research: Connecting and strengthening the livestock supply chain across Colorado to help processors and producers understand how new options will complement current financial and marketing risk management strategies, and how they can manage new financial and marketing risks that could arise from the uncertainty of understanding and meeting new buyer requirements for meat quality, quantity and packaging. The team launched both producer and processor surveys for the direct market livestock sector.
- Enhanced community-based food security: The Good Food Collective in Durango works with other regional organizations and distribution centers but their primary outlets are organizations who serve food insecure populations, including food banks, soup kitchens, churches, schools, preschools, and hospitals.

BY THE NUMBERS:

- There have been 8 master beekeeping programs in Chaffee County with the program expanding to other regions. Nearly 300 people trained to date.
- Of livestock processors surveyed, 'Increase profits' and 'Increase personal free time' were the top two business goals; and preliminary research findings show processors' willingness to allocate capacity to new business commitments is very responsive to price.
- The Good Food Collective harvested at least 133,514 lbs food in 2018 and distributed 34,586 lbs to agencies providing food to underserved or food insecure populations. In addition, 78,400 lbs went to a local cidery and 4,005 lbs went to other value-added purposes, 4,930 lbs went to animal feed, and 480 lbs were composted.

### Key Items of Evaluation

As an example of a PRU initiative, the Good Food Collective (GFC) exists to strengthen its regional food system through efforts to address food security, food justice & equity, and the Southwest Colorado regional food economy. Food Recovery sends volunteers, community members and staff out throughout the region to glean fruits and veggies. In turn, a portion of these fruits and veggies are distributed to underserved populations, while another portion are directed towards regional food enterprises like Fenceline Cider or local restaurants. To date they have gleaned/redistributed over 65,000 lbs. of food. GFC includes a partnership with BearSmart (<http://bearsmartdurango.org/>) to conduct gleaning in a way that reduces human-bear encounters.

## 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.