2018 University of Idaho Combined Research and Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

This combined report of accomplishments for the College of Agricultural and Life Sciences (CALS) represents 115.47 Extension faculty FTEs in outreach education programs and 71.6 research faculty FTEs. The Extension FTEs are contributed by 94 county-based Extension educators organized into four districts and 55 Extension specialists affiliated with academic departments. Extension programs are conducted by faculty organized into 15 program teams (Topic Teams). Extension partners on those teams have generated approximately $5.7 million in external grant support and have recorded 425,128 direct contacts. Extension faculty produced 70 peer-reviewed Extension publications, 77 articles in professional and scientific journals, and many miscellaneous articles including research reports, peer reviewed proceedings, and contributions to trade journals. The research FTEs are distributed across seven academic units, plus 4-H and Ag Extension Education. They are located on the main campus and at off-campus research and Extension centers throughout the state. Research faculty contributed to 2 utility patent applications and 1 Patent Cooperation Treaty application.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	100.0	0.0	69.0	0.0
Actual	115.5	0.0	71.6	0.0

II. Merit Review Process

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

- Internal University Panel
- Combined External and Internal University Panel
- Expert Peer Review
- Other (administrative review)

2. Brief Explanation

Faculty use traditional methods to involve stakeholders, including mailing lists. In some cases, surveys are distributed to every county address. Recently, a multi-state survey sought input from small-farm producers in Idaho and Washington. Though few local budgets support cash incentives for focus-group participation, nearly all activities provide refreshment, and some serve meals. To gather input from the Spanish-speaking population, we print and broadcast announcements in Spanish and invite Latino community leaders to help us understand how to assess needs.

Many stakeholder groups provide input regarding Idaho Agricultural Experiment Station (IAES) research activities:
Dean's Advisory Board for the College of Agricultural and Life Sciences (CALS): Comprised of representatives from Idaho's government, industry, education and CALS academic departments; meets twice yearly.
Seventeen agricultural commissions and organizations: Provide advice for commodity-based programs and CALS disciplines. IAES leads the development for content of annual commodity schools with attendance from Idaho and regional stakeholders. These activities, conducted as major outreach and technology transfer present the latest research, and also serve as a source of stakeholder input regarding research priorities. Some commodity schools for potato, cereal, and sugar beet industries attract over 1,400 registrants annually from Idaho, the Pacific Northwest, and other states, as well as attendees from 25 to 30 countries.
Field days at six off-campus research and Extension centers: IAES faculty conduct tours and workshops for ecology, management and technology, potato-storage research open-house, pomology program open-house, and crop genetic-improvement research programs for potatoes, wheat, and oilseed crops. Events function as educational/technology transfer and promote stakeholder interaction.
IAES research-project portfolio and condensed POW: Annually shared with representatives from the state government including the governor's office, Department of Agriculture, Department of Environmental Quality, Department of Health and Welfare, and Department of Commerce. In addition, reports are regularly provided to legislative committees (agriculture and appropriations) and leadership through testimony, one-on-one visits, and response to inquiries.
CALS faculty, staff, and students: Vested interest in development of research programs responsive to state and regional needs; provide input while developing and delivering programming. The majority of researchers have contact with stakeholders and receive informal input on program directions and priorities during the conduct of experiments.
Eight CALS academic-department advisory committees: Stakeholders with interest in department disciplines, programs, and strategic plans serve as a significant source of input and critique for IAES and CALS. Annually, departmental advisory committees meet with CALS and IAES leadership on program priorities for each unit. One representative from each department's advisory committee also serves on the dean's advisory board to ensure continuity and interdisciplinary connections among units.
Citizen advisory groups and 4-H expansion committees: The groups provide county perspective in 42 of 44 counties of Idaho. Friends of Extension gatherings are advertised to attract residents for their input.
Extension specialists have advisory groups associated with related producer and commodity organizations. Statewide 4-H and Extension advisory boards contribute annual input.

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 (participant observation with collaborative stakeholder groups)

Brief explanation.

During 2018, CALS representatives met at least once with each of Idaho's commodity commission groups. These meetings were conducted to determine priorities for relevant research and Extension programs as well as provide input on the broader impact and direction of CALS and the university. CALS administration met twice with the Dean's Advisory Board and once with faculty in each of Idaho's four administrative regions. Administration asked representatives to help identify those who should serve on future advisory boards.
Other important venues for collecting stakeholder input included Extension Annual Conference, annual Ag Summit and legislative strolling dinner in Boise. The dean or his designee also met with state legislative leaders in Boise regarding agriculture, science and technology, environmental issues, and educational appropriations. These meetings included testimony before several legislative committees as well as informal conversation. CALS research and extension faculty held numerous field days and commodity schools across the state.
Counties follow specific marketing plans developed locally based on demographics and characteristics of their communities. Those plans specify efforts needed to ensure parity in program audiences. Depending on faculty areas of expertise and program efforts, stakeholders may be easy to identify (for example, potato growers or dairy owners) or may be difficult to locate (for example, individuals with chronic disease or families in financial difficulty). For farmers and ranchers, Extension collaborates with the Idaho State Department of Agriculture or other appropriate agencies to verify contact lists, including lists of those individuals who are licensed to apply pesticides. Extension faculty partner with the Idaho State Department of Lands using taxpayer lists to identify private forestland owners. For low income audiences, Extension works with schools, the Department of Health and Welfare, local faith communities, the Idaho Food Bank and the Idaho Hunger Relief Task Force to identify issues and potential clientele. Partnerships with AARP-Idaho and other advocacy organizations have been instrumental in reaching target audiences.
County faculty report that requests are made to advisory committees and to local government leaders and private citizens to help identify new stakeholders. Extension specialists use commodity organizations in a similar fashion. New faculty members rely on veteran faculty to guide them to stakeholders.

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
- Needs Assessments
- Use Surveys
- Other (stakeholders' associations)

Brief explanation.

To generate public input, we design outreach and advertising to reach residents of partner communities. Most faculty members participate on local advisory boards, commodity-association

advisory boards, or community organizations (for example, Idaho Potato Commission, soil and water conservation district and weed management district boards, grower's cooperatives, Idaho Aquaculture Association board of directors) to obtain information relevant to stakeholder needs. Where no such organization exists, faculty help launch new organizations, such as the Biocontrol Task Force in Idaho. Many faculty present to various organizations such as chambers of commerce, industry stakeholders, and service organizations. They ask participants for input about university research and Extension programs. For many programs, stakeholder input is gathered from key informants and from mail/online surveys or in public spaces from traditional/nontraditional stakeholders. Gathering input for several programs involves a major effort to reach under-served audiences (4-H Youth Development and Operation: Military Kids, for example) through targeted visits and phone calls to organizations and individuals known to be advocates for some of our under-served groups.

For hard-to-reach audiences, faculty members meet with target audiences' representatives and advocates. Examples include the juvenile justice community, Head Start personnel and the association of Idaho Head Start programs. For other target audiences, like new business owners, faculty members conduct surveys for business development service providers and interact with agricultural specialists working for the power industry. Local Extension offices distribute surveys. Information on how to participate in surveys is mailed out in newsletters, announced in newspapers, and posted on webpages and social media. Comments left on Facebook and links on blogs and web pages are increasingly valuable to help understand the interests and needs of clientele. Most faculty members also ask program participants to recommend future programs. Some faculty report using newsletters to request input from readers.

CALS representatives met with Idaho's commodity commission groups to determine priorities for research and Extension programs relevant to the commissions. CALS administration met twice with the dean's advisory board and once with faculty as a group in each of Idaho's four administrative regions. Other important venues for collecting stakeholder input included Extension Annual Conference and annual Ag Summit and legislative strolling dinner in Boise. The dean or his designee also met with state legislative leaders in Boise regarding agriculture, science and technology, environmental issues, and educational appropriations. These meetings included testimony before several legislative committees as well as informal meetings. CALS research and extension faculty held numerous field days and commodity schools across the state.

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 with the general public (open meeting advertised to all)
- Survey of the general public
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional groups
- Meeting specifically with non-traditional individuals
- Survey specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public
- Survey of selected individuals from the general public

Brief explanation.

In-person listening sessions were conducted in six locations as well as five listening sessions conducted electronically for rural counties. Meetings were advertised as open to any one. Surveys were mailed to individuals who could not attend a listening session.
Stakeholder input influenced several shifts in emphasis during the past several years, including a major increase in investments for family financial education, health and fitness, and fighting obesity. CALS demonstrated efforts to respond to federal and state agency stakeholders by shifting resources into childhood obesity, hunger, and other priority programs. Based on stakeholder input, we accelerated efforts to build a program that integrated health and nutrition, small farms and horticulture to address local food-systems challenges, including the coordination of the two area food-system educators.
Discipline-driven programs are often re-directed because of input gathered at each event to help guide the content of the next program. As examples, increased research and outreach activities related to annual forages because of stakeholder input occurred. Several annual forages trials and demonstrations were added to our portfolio of outputs. Participants at the international Idaho Potato Conference are surveyed each year to provide feedback about their continuing education needs as are participants at more than two dozen cereal schools and beef schools. The suggestions from participants are used, in part, to direct the agenda for the next iteration of the program. We have also identified a growing demand for education about health and fitness. Administrators have ongoing discussions about how positions can be re-tasked or re-classified to respond to stakeholder needs.
Information acquired statewide from meeting with stakeholders is discussed at various CALS leadership meetings. These include monthly CALS leadership meetings are attended by dean and directors as well as leaders from academic departments, research and extension centers and district offices. In addition, priority setting based on stakeholder input is conducted in an annual dean and directors' retreat and in annual research-Extension topic team meetings.
Local Extension offices distribute surveys requesting input; information on how to participate in the surveys is often mailed out in newsletters, announced in newspapers, posted on our web pages and on social media. Input collected from more than 8,000 individuals is currently influencing the educational programming delivered in Extension horticulture programs and a follow-up survey is in the planning stages.
Methods to deliver university programs and make materials available are also changing based on stakeholder input. Significant changes include a major shift to internet availability of scientific papers and Extension publications, remote delivery of programs through internet-based platforms, and through the use of blogs, Facebook, and other media.

3. A statement of how the input will be considered

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

Brief explanation.

We are witnessing increased interest in local food systems, food insecurity, hunger, annual and alternative forage sources, reducing energy costs associated with irrigation, and improving

participation in higher education, particularly for Hispanics. In response, Extension utilized the two added positions for local food-systems education, and CALS is working to create a program to integrate teaching research and Extension faculty about healthy community issues. We continue to establish new trials for annual forages around the state and deliver educational programs to upgrade or calibrate sprinkler systems and to install drip irrigation where relevant. We have initiated a number of college fair events for teens and parents across Idaho, including partnerships with Native American and Hispanic communities. We are observing changes in the method of program delivery and information access desired by our stakeholders, favoring an array of electronic and on-demand formats.

Brief Explanation of what you learned from your Stakeholders

See above.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{No Data Entered}	{No Data Entered}	{No Data Entered}	{No Data Entered}

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	2825830	0	2734472	0
Actual Matching	2825830	0	2734472	0
Actual All Other	9049352	0	31609251	0
Total Actual Expended	14701012	0	37078195	0

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

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Sustainable Energy: Land and Livestock

☑ 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	5%		0%	
111	Conservation and Efficient Use of Water	5%		0%	
112	Watershed Protection and Management	0%		4%	
121	Management of Range Resources	10%		8%	
122	Management and Control of Forest and Range Fires	5%		0%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	5%		8%	
205	Plant Management Systems	12%		0%	
213	Weeds Affecting Plants	5%		8%	
216	Integrated Pest Management Systems	5%		0%	
301	Reproductive Performance of Animals	5%		13%	
302	Nutrient Utilization in Animals	10%		15%	
303	Genetic Improvement of Animals	0%		2%	
305	Animal Physiological Processes	5%		15%	
306	Environmental Stress in Animals	5%		0%	
307	Animal Management Systems	12%		15%	
308	Improved Animal Products (Before Harvest)	5%		8%	
605	Natural Resource and Environmental Economics	5%		2%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	0%		2%	
901	Program and Project Design, and Statistics	1%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	8.7	0.0	6.0	0.0
Actual Paid	15.8	0.0	8.4	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
468944	0	612674	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
468944	0	612674	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
943157	0	5850615	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 26,527 direct educational contacts through Extension and 86,546 indirect contacts. Team members published 16 articles in refereed journals and 16 Extension publications, and they participated in projects funded by $496,478.79 in grants.
Planned activities included beef schools, forage schools, Beef Quality Assurance (BQA) workshops, weed workshops, monitoring workshops, demonstration/applied research trials, Extension publications, popular press articles, tours, field days, faculty training sessions, websites, office visits, and farm/ranch visits. As appropriate, information generated by the team was presented in scientific journals and at professional meetings.

1. Alfalfa and Annual Forage Production and Harvesting

Projects include:

- Alfalfa variety trials
- Irrigation management trials and demonstrations
- Cover crop seeding and grazing studies
- Control of alfalfa pests
- Western Alfalfa and Forage Conference
- Idaho Hay and Forage Conference
- Local forage and pasture schools and workshops
- Popular press and journal articles
- Forages website
- Educating lawmakers and the public
- Extension publications
- Soil testing/fertilizer recommendations
- Research on emerging thrips infestations

2. Efficient Production Management and Marketing of Livestock
Projects include:

- Beef Quality Assurance workshops
- Pasture management workshops including ventenata control and rejuvenation
- Workshops and projects related to Trichomoniasis and dystocia
- Local Winter Beef Schools, Cattlemen's Winter Schools, and Forage Schools
- Educational programs targeting young cattle producers
- Enterprise budgets for cow/calf ranches
- Grassroots Advisory Meetings
- Wolf depredation compensation consults
- water rights workshops
- Applied reproductive strategies in beef cattle, including ultrasound technology for pregnancy checks
- Popular press and journal articles
- Extension publications
- Individual consultations on marketing, management, and grazing systems and management

3. Rangeland Resource Management and Utilization
Projects include:

- Idaho Weed Conference
- Idaho Range Livestock Symposium
- Workshops related to range monitoring, mineral status, ventenata biology and management, and invasive plant survey procedures
- Weed education and management plans, including plant community susceptibility models used in the state and region
- Range fire evaluations and post-fire evaluations
- Pesticide specialist and recertification training, and pesticide safety training
- Local rangeland demonstrations, workshops, and tours--Sagebrush Saturdays
- Popular press and journal articles
- Research on effects of grazing
- Extension publications

2. Brief description of the target audience

The target audience included beef cattle producers and ranchers, tribal beef producers, representatives of several beef industry sectors (cow-calf producers, stocker/backgrounders, feedlot operators, allied industry representatives), agribusiness, sheep producers, veterinarians, organic farmers, forage producers, feedlot operators, pesticide applicators, land owners, small-acreage land managers and farmers, public land grazing allotment permitees, county commissioners, decision makers, livestock associations (i.e., Idaho Cattle Association, Wool Growers Association, etc.), conservation groups, land trusts, consultants, scientists, nonprofit organizations, 4-H and other youth, university staff and faculty, departments/individuals who have a need for educational programming and projects in livestock and natural resource management, tribal land management agencies, and federal, state, and local land management agencies.

3. How was eXtension used?

Used primarily as a resource for Extension professionals

V(E). Planned Program (Outputs)

1. Standard output measures

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	21974	84187	4553	2359

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	16	31	47

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Schools (multiple sessions of instruction on multiple subjects)

Year	Actual
2018	32

Output #2

Output Measure

- Workshops (a single meeting with one or more subjects presented, e.g., winter beef schools)

Year	Actual
2018	1205

Output #3

Output Measure

- Demonstrations/applied research projects.

Year	Actual
2018	45

Output #4

Output Measure

- Popular press articles

Year	Actual
2018	50

Output #5

Output Measure

- Newsletter issues

Year	Actual
2018	52

Output #6

Output Measure

- Field days

Year	Actual
2018	25

Output #7

Output Measure

- Presentations at producer meetings

Year	Actual
2018	164

Output #8

Output Measure

- Budgets

Year	Actual
2018	1

Output #9

Output Measure

- Curriculum

Year	Actual
2018	3

Output #10

Output Measure

- Survey

Year	Actual
2018	24

Output #11

Output Measure

- Tours

Year	Actual
2018	13

Output #12

Output Measure

- Websites

Year	Actual
2018	1

Output #13

Output Measure

- Blog

Year	Actual
2018	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Learners acquire knowledge and understanding of new, approved, or recommended practices. Indicator: Number of participants demonstrating change in knowledge on evaluation instruments (i.e. pre- and post-test results). [number of evaluations administered and evaluated]
2	Learners will adopt new, accepted, or recommended production practices. Indicator: Number of participants indicating in post- surveys that they intend to implement recommended practices.
3	Learners are aware of new, accepted, or recommended production practices and emerging technologies (BQA, NAIS, etc.) Indicator: Number of participants at educational events [Based on sign-in sheets]
4	O: Producers possess skills and knowledge about beef quality assurance (BQA). I: Number of Idaho Beef Quality Assurance (BQA) Program certificates awarded.
5	O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.
6	Producers are provided best management practices for predicting the yield and quality of a forage crop prior to harvesting.

Outcome #1

1. Outcome Measures

Learners acquire knowledge and understanding of new, approved, or recommended practices. Indicator: Number of participants demonstrating change in knowledge on evaluation instruments (i.e. pre- and post-test results). [number of evaluations administered and evaluated]

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	450

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Young beef cattle producers are in need of education on the beef industry. Cattle producers are in need of education on grazing management. Cattle producers are in need of education on annual spring forage production options.

What has been done
Extension organized a Idaho Young Cattle Producer Conference and a Three Rivers Grazing Conference. Additionally, we planted and harvested a spring planted Annual Forage Trial and presented results to producers.

Results
There were 22 participants in the second annual Idaho Young Cattle Producer Conference sponsored by University of Idaho Extension and the Idaho Cattle Association. Evaluation results showed that participants learned about the industry and will apply what they learned on their own operations. The Grazing Conference had 152 participants. Survey results showed that 100 percent of respondents will apply what they learned on their own ranches. The Annual Forage trials were planted and harvested at two locations. Results will be adopted by producers in 2019.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
121	Management of Range Resources

122	Management and Control of Forest and Range Fires
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
205	Plant Management Systems
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
605	Natural Resource and Environmental Economics

Outcome #2

1. Outcome Measures

Learners will adopt new, accepted, or recommended production practices. Indicator: Number of participants indicating in post- surveys that they intend to implement recommended practices.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	143

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Many landowners are interested in purchasing cattle to manage their pasture and provide a source of income for their property

What has been done
Extension developed a workshop that provides landowners with the basic considerations for purchasing and managing cattle.

Results
97% of attendees stated they would implement the practices learned.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
121	Management of Range Resources
122	Management and Control of Forest and Range Fires
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
205	Plant Management Systems
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
605	Natural Resource and Environmental Economics

Outcome #3

1. Outcome Measures

Learners are aware of new, accepted, or recommended production practices and emerging technologies (BQA, NAIS, etc.) Indicator: Number of participants at educational events [Based on sign-in sheets]

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	2176

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The beef industry is changing at an extremely rapid pace and beef producers and rangeland managers/users are faced with a variety of issues and concerns. To remain productive and profitable, these industry participants must be kept abreast of current issues and trends and be provided with the knowledge and skills to address the issues.

What has been done
Extension led industry representatives, allied industry representatives, and government agency representatives in the planning, development, and delivery of the 2018 Idaho Range Livestock Symposium (IRLS). The symposium was held at four (4) locations around the state and offered attendees information relative to the current issues facing beef producers and rangeland managers/users.

Results
Approximately 325 individuals (beef producers, rangeland managers/users, students, veterinarians, etc.) attended the 2018 IRLS. Attendees received information on topics such as managing ranch resources, national beef quality audit results, beef packing/processing in Idaho, grazing effects on sage grouse, writing public comments, and matching cows to the environment. Each attendee left with information that could be applied to their individual operations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
121	Management of Range Resources
122	Management and Control of Forest and Range Fires
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
205	Plant Management Systems
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
605	Natural Resource and Environmental Economics

Outcome #4

1. Outcome Measures

O: Producers possess skills and knowledge about beef quality assurance (BQA). I: Number of Idaho Beef Quality Assurance (BQA) Program certificates awarded.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	149

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Consumers of beef and beef products demand a safe, wholesome, and quality product. Beef producers need the knowledge, tools, and skills to produce safe, high quality beef that consumers seek in the marketplace today.

What has been done
Extension and AVS faculty member Phil Bass held a beef quality assurance (BQA) training in conjunction with the D&B Animal Handling seminar.

Results
Approximately thirty-five (35) individuals attended BQA training and certification event and each had the opportunity to complete the BQA certification exam. Over 70 participants statewide obtained the BQA certification.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

Outcome #5

1. Outcome Measures

O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
It is our responsibility to prepare and educate the next generation of scientists.

What has been done
Graduate students conducted research associated with this topic team.

Results
Students fulfilled advance degree requirements, training and professional development where research results were presented at professional society meetings.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
305	Animal Physiological Processes
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

Outcome #6

1. Outcome Measures

Producers are provided best management practices for predicting the yield and quality of a forage crop prior to harvesting.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Development of improved forage quality tests will allow livestock producers to improve ration formulation and forage allocation to their livestock. Improved rations will provide more efficient livestock production, few animal health problems,and reduced nutrient loads.

What has been done
Scientists have evaluated the effects of day/night temperatures and solar radiation on digestible neutral detergent fiber and other forage quality measurements of alfalfa grown in different environments. The generation of unbiased site data allows for the development of predictive models for alfalfa yield and nutritional quality across different production regions.

Results
Research results have been presented at scientific conferences and workshops to researchers, extension faculty and producers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (Predation (wolves) and depredation (elk/deer; cultural norms of a conservative community; administration activities)

Brief Explanation

The ag economy is in a lull currently with depressed prices and unstable international trade. Extension has been pushing producers to adopt cover cropping practices the past few years. There certainly is a cost to cover crop adoption and when prices are low and incomes reduced, producers are apprehensive about spending money on practices from which they may not see an economic return.
Natural disasters have effected various markets this year, but the biggest one is fires due to drought. This caused producers to take cattle off of needed summer range and feed hay reserves that were supposed to be for winter. Weather in general effected turnout of schools and workshops. if it was a good day to be out in the field they would rather work than come to a class. Public policy changes and government regulations have everyone on edge deciding if prices are going to go up or down for the following year. Producers are also always trying to compete with a shift in public priorities from a rural community to suburban communities.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

The Idaho Young Cattle Producer Conference was held and was a huge success again in 2018. The partnership between the University of Idaho and the beef cattle industry in Idaho to conduct this conference is of tremendous value to both parties. The participants were surveyed at the end of the conference. Participants were asked the to rate if they would apply the knowledge learned from the conference on their own ranch and the response was a 4.8 out of 5 (definitely will apply knowledge). The grazing conference was held and 100 percent of the participants indicated that they would apply what they learned on their own ranch.

Key Items of Evaluation

My best impact story pertaining to the Land and Livestock Topic Team was the discovery that a selenium problem existed on a range unit of the Fort Hall Reservation. Basically, one particular range plant (western aster), was accumulating highly toxic levels of selenium, which can lead to livestock deaths. I collaborated extensively with producers, representatives of the Simplot Mining Company, and tribal departments, among others, to develop and implement a project to identify, map, and treat existing selenium accumulator plants. In addition, I evaluated dead animals found in affected areas and performed necropsies if possible. Through this program, we eliminated livestock deaths due to selenosis for 2018.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Global Food Security and Hunger: Cereals

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%		20%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		10%	
202	Plant Genetic Resources	20%		10%	
205	Plant Management Systems	25%		10%	
211	Insects, Mites, and Other Arthropods Affecting Plants	5%		15%	
212	Pathogens and Nematodes Affecting Plants	10%		10%	
213	Weeds Affecting Plants	10%		15%	
216	Integrated Pest Management Systems	15%		10%	
502	New and Improved Food Products	5%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	4.6	0.0	10.0	0.0
Actual Paid	6.8	0.0	13.7	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
143772	0	437421	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
143772	0	437421	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
550267	0	5467624	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 8,754 direct educational contacts through Extension and 84,319 indirect contacts. Team members published five articles in refereed journals and 10 Extension publications, and they participated in projects funded by $303,326.25 in grants. Multiple cereal schools were conducted throughout the state allowing Extension faculty to interact with growers and provide technology transfer for new varieties. Cereal school topics included irrigation management, varietal performance, disease, seeding rates, cover crops, herbicide-resistant weeds, costs and benefits of liming, proper chemical management, insect impact and control, cereals research and education produced by University of Idaho, and grain quality. Other methods of transferring knowledge to producers, industry, and the public included Integrated Pest Management

(IPM) training workshops, field tours and field days (many related to cover crops), off-campus credit and continuing education classes, and stakeholder seminars.

Team members met with grower advisory committees, processors, and industry representatives to pass on current research data, share knowledge, implement projects, and get their feedback. The team also provided molecular testing of samples for growers and provided quick response to this year's barley yellow dwarf virus (BYDV) outbreak.

Publication types included newsletters, Extension publications, progress reports, scientific publications, and general media articles. Topics covered this year included IPM, sustainable dryland farming, and spring wheat and barley weed control.

Research topics included a cover crop rotation study, BYDV alternative weedy host research, weed control studies, sources and rates of lime applied to acid soils, low elevation sprinkler application irrigation, and hard winter wheat studies in southeastern Idaho. The workgroup team also assessed variation in varietal response to different quantities of nitrogen fertilizer and seeding rates. New trials were established for nurseries developing sport trapping methodology for early-warning system for diseases as well as enhancing cropping diversity and using drones to estimate nitrogen content.

Team members interacted with other professionals at meetings to transfer knowledge, form alliances, and implement projects.

2. Brief description of the target audience

Agriculture producers
Cereal growers in Idaho - This group was provided with technology to enhance cereal production and profitability, and they were asked to provide feedback and suggestions related to needs and areas of concern for profitable cereal production. This group includes farmers, ranchers, farm partners, landowners, and producers interested in organic production.

Agribusiness and support workers - This group was provided with resources for technology development and delivery, and they were asked to provide feedback and suggestions for directions of the program. This group includes agribusiness support personnel, pesticide and fertilizer producers, Extension educators, USDA-ARS wheat and barley breeders, private breeding companies, crop advisors, crop insurers, agricultural lenders, aerial applicators, State Department of Agriculture personnel and field staff, seed dealers, grain distributors, grain mill workers, crop fertility providers, crop producers interested in barley rotation, industries using malting barley as a raw material, and crop protection products providers.
Other target audiences include elected officials, nonprofits, academic agricultural researchers, other researchers and economists, Natural Resource Conservation Service employees, Soil Conservation District employees, and the general public.

3. How was eXtension used?

Used primarily as a resource for Extension professionals

V(E). Planned Program (Outputs)

1. Standard output measures

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	8421	84264	333	55

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	10	5	15

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Idaho Cereal Schools

Year	Actual
2018	21

Output #2

Output Measure

- Release and adoption of new cereal varieties

Year	Actual
2018	0

Output #3

Output Measure

- Publication of CIS, Progress reports, PNW, and other Ext. Pubs.

Year	Actual
2018	16

Output #4

Output Measure

- Develop pest control technology - project/experiments

Year	Actual
2018	15

Output #5

Output Measure

- Research on management systems - projects/experiments

Year	Actual
2018	30

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Producers gain knowledge about improved cereals management at cereal schools, field days, seminars, and re-certification events. I: Number of participants attending cereal schools, field days, etc.
2	O: Producers are aware of cereal resource publications. I: Number of cereal extension publications distributed or downloaded.
3	O: Producers adopt new cereal varieties. I: Increase in number of acres of new varieties (released within 5 years; greater than previously grown).
4	O: Adoption of new crop production methods. I: Number of growers who report adoption through surveys at educational events and meetings.
5	O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

Outcome #1

1. Outcome Measures

O: Producers gain knowledge about improved cereals management at cereal schools, field days, seminars, and re-certification events. I: Number of participants attending cereal schools, field days, etc.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	579

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Producers seek information on current conditions in cereal management from reliable sources, attending special topic workshops as well as regular cereal school events to learn about current conditions as well as emerging topics of concern.

What has been done
We created a special topic 1-day workshop on declining pH values throughout the wheat-producing region in North Idaho and eastern WA. Producers brought soil samples in order to measure pH of their soils where we observed widespread low levels. We discussed topics such as liming for our region. In addition, we continue to discuss this issue as well as other issues affecting cereal producers in our region or in our regularly scheduled cereal schools, for example, at regular cereal schools, we discuss average returns by acre for the typical crops in our region.

Results
150 participants in the soil-acidity workshop filled the room, and some producers were turned away at the door. In response to unusual conditions, growers increased acreage of garbanzos by over 70 percent, and decreased winter wheat acreage by 14 percent.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
201	Plant Genome, Genetics, and Genetic Mechanisms
202	Plant Genetic Resources

205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
502	New and Improved Food Products

Outcome #2

1. Outcome Measures

O: Producers are aware of cereal resource publications. I: Number of cereal extension publications distributed or downloaded.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	5650

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Producers are not aware of recent enterprise budgets that are available to help them make choices among competing alternatives in order to maximize profitability.

What has been done
We distributed copies of Extension publication PNW701: Cost and Returns Baseline for the Dryland Grain and a resource poster (8.5 by 11) at a conference as well as 1-page summaries with resource lists at cereal schools, a field day, and local Idaho Grain Producers Association meetings.

Results
Based on knowledge gained from distributed publications, producers could measure and compare the economic returns from crop more precisely when relative prices change. They responded by producing fewer acres of unprofitable crops like wheat when the price was below costs of production, and more acres of relatively profitable crops like garbanzos, before their price also dropped. Using up-to-date tools helps them make informed decisions that reduce risk for their operations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
502	New and Improved Food Products

Outcome #3

1. Outcome Measures

O: Producers adopt new cereal varieties. I: Increase in number of acres of new varieties (released within 5 years; greater than previously grown).

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

O: Adoption of new crop production methods. I: Number of growers who report adoption through surveys at educational events and meetings.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	40

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In order to diversify and meet seasonal forage needs, growers can adopt new crop production methods like production of spring-planted annual forages.

What has been done
Two replicated trials were presented to growers in the region.

Results

40 growers participating in the program reported their interest and desire to add new crop production methods in their crop rotations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #5

1. Outcome Measures

O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	7

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
It is our responsibility to prepare and educate the next generation of scientists.

What has been done
Graduate students conducted research associated with this topic team.

Results
Students fulfilled advance degree requirements, training and professional development where research results were presented at professional society meetings.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
201	Plant Genome, Genetics, and Genetic Mechanisms
202	Plant Genetic Resources
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

Our classes are well attended when we offer classes that give producers pesticide credits and they need those credits to comply with government regulations. Other factors that influence attendance is an excellence venue which has delicious food, and producers are making money on their products. When they are losing money being a farmer, they seem to come out to events less and we have less success.
Water use in cereal production is largely affected by weather conditions (e.g., rainfall distribution and temperature). Growers take into consideration of irrigation cost and wheat price for their economic returns. The quantity of water available for growers and the date allowed to initiate irrigation are regulated by the government.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

I conducted a written evaluation of the 29 attendees at the 2018 Bonners Ferry Cereal School. All of them responded that the information they learned was useful to them, with 10% reproted increase in knowledge (5 on a scale of 1 to 5), while 30% each gave a response of 4, 3, and 2. In terms of the quality of the cereal school program, 45.5% rated it as Very Good (highest level), and another 45.5% rated it as Good. Just 9% rated it as Fair, and no one gave it the lowest score of Poor. Altogether, those who attended the school manage 16,730 acres in this region. When asked if information at past cereal schools influenced their management, 70% responded yes and 30% percent said the question was not applicable. When asked if information learned in the current cereal school would influence their management decisions in the upcoming season, 70% replied yes while 30% replied "Not applicable." The topics they found most valuable included soil quality, variety trials and yields, ag economics, marketing, the Blackleg survey, barley, and current topics.

Key Items of Evaluation

My best impact story was the presentation on the economics of liming for this region. Traditionally, growers have not limed soils in this region, and after about a century of production, these soils are increasingly acidic. I felt that my presentation on a long-term

investment approach to liming was impactful and well received, as it complemented information presented on the agronomic trials and the hands-on soil pH results for producers who brought soil samples to be tested. I showed costs and benefits of recent trials so they could start to research this topic for their own soils. I also showed historical work revealing what happens if current trends continue, in that at some point yields decline drastically and costs of fixing the situation are drastically increased. I showed them how to evaluate an investment in liming for their soil, and the financial outcomes of this investment under different crop price scenarios. I discussed sharing the costs of this capital investment with their landlords. I left them with various tools for calculating their own impacts, including templates for costs and returns analysis, partial budgets, and discounted cash-flow analysis.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Commercial and Consumer 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	15%		0%	
111	Conservation and Efficient Use of Water	15%		25%	
202	Plant Genetic Resources	8%		25%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	5%		0%	
204	Plant Product Quality and Utility (Preharvest)	10%		25%	
205	Plant Management Systems	25%		25%	
216	Integrated Pest Management Systems	20%		0%	
805	Community Institutions, Health, and Social Services	2%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	7.7	0.0	1.3	0.0
Actual Paid	11.9	0.0	1.4	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
153561	0	92657	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
153561	0	92657	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
999653	0	481280	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Horticulture team members reported 36,899 direct contacts and 12,424,826 indirect contacts. Team members published two Extension publications and two refereed journal articles and participated in projects supported by $14,498.65 in grant funds. Team members were active in 20 counties.
Four counties delivered more accessible plant clinics. Advanced Master Gardener classes and projects were delivered in seven counties. Idaho faculty hosted a regional Master Gardener conference attracting participants from Idaho, Montana, Utah, and Wyoming. Twenty counties held classes for Master Gardeners in 2018.
They delivered Idaho Victory Garden courses this year. These courses have been taught for ten consecutive years. The estimated potential value of food produced in graduates' gardens every year exceeds $300,000.
Outreach for commercial producers included collaboration with Idaho Nursery and Landscape Association to provide instruction at Green Collar College and workshops for soils and integrated pest management. Educational videos were posted to the Integrated Pest Management website.
Community classes/workshops reached thousands and included gardening classes, hands-on workdays, pesticide classes, food preservation, insect identification, bee keeping, seed/plant starting, vermiculture and composting, tree care, grafting, fruit production, vegetable crop culture, basic entomology, market gardening, landscaping and more. Youth-related activities included 4-H presentations and presentations at schools. Supervised Master Gardeners delivered many presentations for local gardening groups and interested members of the public, served hundreds who sought assistance in plant clinics and contributed to community projects including school gardens, community gardens and community beautification.
Team members worked with Fort Hall Extension Horticultural program, continuing a community garden and assisting with rodent pest problems, tree/lawn problems, windbreak development, beautification projects, and insect/weed/herbicide questions.
Master Gardeners spent hours teaching or providing service in various communities through projects and plant clinics. Over 1,000 home garden clientele were assisted with research-based and environmentally responsible solutions to common garden and landscape issues. The Regional Master Gardener Convention in Rexburg had attendees from a multi-state region. It comprised 13 different classes, focusing on hands-on education in the demonstration gardens of the BYU-Idaho campus, including weed management and short season gardening. Community garden and food projects like Gardeners for Organic Wellbeing led by Master Gardener volunteers produced thousands of pounds of food for low-income residents in 2018. Media outreach included regular contributions to local newspapers, bulletins, local TV and radio interviews, targeted newsletters and trade publications, and through social media. The Idaho Landscapes and Gardens Website remains relevant for thousands of users through ongoing updating, content management, and new contributions. A new website was created as a resource guide to local producers as part of a Farm-to-Table dinner series.

2. Brief description of the target audience

Master Gardener Education Project: The target audience included Idahoans interested in expanding knowledge while educating others. The program is designed to develop volunteers capable of providing education that will impact resources management and quality of life within communities through the state. Beginning Master Gardeners are required to participate in 30-70 hours of basic training in topics that include botany, basic soils, plant development, fertility, irrigation, plant problem diagnosis, pest control, etc. followed by 30-70 hours of volunteer service to the public. Advanced Master Gardeners become volunteer instructors and are expected to answer horticultural questions from the general public, assist in organizing workshops, conferences, and other education opportunities, develop public demonstration projects, and assist communities with plant-based improvement projects.
Consumer Horticulture Education Project: The target audience for this project included Idaho residents with an interest in home horticulture. This broad audience seeks opportunities to learn sustainable horticultural principles from numerous sources, including websites, publications, popular press articles, presentations, plant clinics, workshops, conferences, exhibits, short courses, Master Gardener Volunteers, and other teaching forums. In 2018, organized groups from this target audience included the Fort Hall Extension Horticultural program, tribal members and departments, community public works departments, garden clubs, community gardeners, civic groups, public libraries, school children, church groups, and other interested organizations including St. Alphonsus Hospital in Nampa and Boise, which requested gardening classes as a part of their employee wellness program.
Green Industry Education Project: The audience consisted of owners, managers, and employees of green industry companies taking an active role in recommending curriculum, organizing teaching opportunities, and working to become competent horticulturists. Examples include business and nursery workers and owners, garden retail stores and centers, landscapers, commercial tree and landscape plant producers, alternative crop producers, organic producers, Spanish-speaking workers, small truck farmers, pesticide applicators, and fruit producers. The team serves this audience via professional development training opportunities and technical assistance.
Fort Hall Extension Horticultural program: Target audiences included the community of Fort Hall, outlying Reservation districts, Tribal and non-Tribal adults, elders, families, and youth interested in producing their own food and learning more about horticulture, specifically tree selection and pruning as well as landscape design. Also targeted were Tribal departments that donated funding, labor, and time to develop several Fort Hall Horticultural Projects and the Fort Hall Community Garden.
Underserved Audiences: Current underserved groups include low-income, Hispanic, Native American, and immigrant populations. This includes the native and non-native community members on or near the Nez Perce and Fort Hall Indian Reservations.
General public

3. How was eXtension used?

One team member developed an online eXtension class for Idaho Victory Garden. It was delivered to more than 200 students.

V(E). Planned Program (Outputs)

1. Standard output measures

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	29159	12412115	7740	12711

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	2	2	4

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Master Gardener-Advanced MG Workshops/Tours: faculty contribution to Advanced MG Training. Do not include beginning MGs. Multiple team members may contribute to a single event. Enter the number of Advanced MG training events you helped organize or during which you presented educational material.

Year	Actual
2018	57

Output #2

Output Measure

- Master Gardener-Beginning MG Courses Organized/Supervised: Number of MG courses (not classes within a course) organized/supervised by educators. Do not enter individual presentations made for basic MG training. Please enter the number of courses you organized or supervised during the past year.

Year	Actual
2018	10

Output #3

Output Measure

- Consumer Education-Public Outreach Pubs/Products: Number of faculty-authored press and Extension media products developed for consumers. Includes magazine articles, newspaper columns, newsletters or newsletter articles, radio or television spots. Enter the number of products developed/published during the past year.

Year	Actual
2018	77

Output #4

Output Measure

- Consumer Education-Websites: Statewide and county websites (faculty-authored) containing consumer-based horticultural information, developed or actively improved during the year. Enter only the number of actual websites (not individually-authored web products).

Year	Actual
2018	8

Output #5

Output Measure

- Consumer Education-Workshops, Seminars, Demonstrations, Field Days: Faculty contributions to consumer-based education events (exclude MG classes, reported elsewhere). Example: an event with one organizer and two faculty teachers would be reported by all three contributors. Enter the number of events.

Year	Actual
2018	154

Output #6

Output Measure

- Green Industy Education-Workshops, Seminars, Clinics: Faculty activity associated with green industry educational events. Each person involved in an event should record their contribution, resulting in a sum of team activity. Enter number green industry education events that you organized or at which you presented.

Year	Actual
2018	17

Output #7

Output Measure

- Master Gardener-Volunteer Hours: This metric reflects the time contributions of MG volunteers you directly supervise. Please enter the total number of hours contributed by all volunteers over the past year.

Year	Actual
2018	11411

Output #8

Output Measure

- Green Industry Education-Websites: Number of statewide or county web sites with green industry-targeted content developed or actively improved during the year. Do not enter authored content products. Enter the number of active sites.

Year	Actual
2018	3

Output #9

Output Measure

- Master Gardener-Direct Contacts with Stakeholders Made by Certified MGs: This metric reflects contacts made by certified MGs (in clinics, presentations, etc.) as opposed to those made by faculty. Please enter the number of direct contacts during the past year by volunteers you supervise.

Year	Actual
2018	23161

Output #10

Output Measure

- Master Gardener-Presentations to Beginning MGs: Measure of direct faculty contribution to beginning MG training other than course creation or organization. Enter number of presentations you made to beginning MG classes (face-to-face, distance, presentation of recorded materials that you personally prepared).

Year	Actual
2018	95

Output #11

Output Measure

- Master Gardener-Volunteer-Authored Pubs/Products: Report products developed by supervised MGs or other volunteers (exclude those with faculty authors): bulletins, fact sheets, web content, PowerPoint, media productions for radio or television. Enter number of products during past year.

Year	Actual
2018	165

Output #12

Output Measure

- Master Gardener-Volunteer MG Contributions to Workshops, Seminars, and Demonstrations:

Number of volunteers who organized or presented at educational events (regardless of whether a faculty member was involved). Multiple volunteers may be recorded for each event. Enter number of individual volunteer contributions.

Year	Actual
2018	391

Output #13

Output Measure

- Consumer Education-Scholarly Pubs/Products: Number of research-based, peer-reviewed scholarly products published by team faculty. Examples: journal papers, bulletins, CISs, or peer-reviewed web content or video productions. Enter the number of faculty-authored scholarly products published during the past year.

Year	Actual
2018	6

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Master Gardener- Training Courses: The desired outcome is a measurable increase in knowledge among new Master Gardener trainees in key topics covered by the Idaho Master Gardener curriculum. Indicator: One indicator of their potential to provide high quality service and information is the knowledge increase experienced by Master Gardeners during their training. This can be assessed by pre-and post-tests and self-assessments that measure the number of key topic areas (out of 25) in which their knowledge increased.
2	Consumer Education-Information Availability: Up-to-date, research-based, sound horticultural information is accessed by increasing numbers of Idaho consumers to inform and influence their horticultural practices. Indicator: The number of visitors to the comprehensive Idaho Landscapes and Gardens Website each year is one indicator of how many consumers are directly accessing our horticultural information.
3	Master Gardener-Program Operations. The desired outcome is statewide Master Gardener program that operates according to state policies, ensuring cohesion, program branding and quality. Indicator: One indicator is the number of Master Gardener programs statewide that operate according to written policy. Coordinators will be surveyed to determine the operational status of each county program. Team Leader will provide the final percentage.
4	Green Industry Education-Certification Training. The desired outcome is green industry personnel with sufficient knowledge to pass public certification exams. Indicator: The Hort Team offers training in preparation for taking the Certified Nursery Professional exam. The number of participants passing the exams after Extension training is an indicator of program success.
5	Master Gardener-New Certification: The desired outcome is a pool of newly trained Master Gardener volunteers to maintain or extend efforts in home horticulture outreach. Indicator: A stable or growing count of newly certified Master Gardeners is an indicator of program sustainability. Enter the number of new Master Gardeners certified during the past year.
6	Master Gardener-Retention of MG Volunteers: The desired outcome is a pool of returning trained, qualified, certified Master Gardener volunteers available for service within communities and counties statewide. Indicator: This is a measure of the effectiveness of ongoing Master Gardener training and retention programs. Enter number of active, certified Master Gardeners and Advanced Master Gardeners currently serving in your county(ies).
7	O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

Outcome #1

1. Outcome Measures

Master Gardener- Training Courses: The desired outcome is a measurable increase in knowledge among new Master Gardener trainees in key topics covered by the Idaho Master Gardener curriculum. Indicator: One indicator of their potential to provide high quality service and information is the knowledge increase experienced by Master Gardeners during their training. This can be assessed by pre-and post-tests and self-assessments that measure the number of key topic areas (out of 25) in which their knowledge increased.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Residents seek horticulture info and request help in solving plant disease and insect problems in their yards. With a large population residing in Ada County, having enough trained volunteers to assist with the thousands of phone calls, emails and face to face contacts is essential.

What has been done
Each year a 17-week MG Volunteer Development Program is organized and taught to develop an army of volunteers trained in horticulture.

Results
Pre and post exams and class evaluations indicated that participants had a 82 percent increase in their horticultural knowledge.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems

216 Integrated Pest Management Systems

Outcome #2

1. Outcome Measures

Consumer Education-Information Availability: Up-to-date, research-based, sound horticultural information is accessed by increasing numbers of Idaho consumers to inform and influence their horticultural practices. Indicator: The number of visitors to the comprehensive Idaho Landscapes and Gardens Website each year is one indicator of how many consumers are directly accessing our horticultural information.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	85107

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Idaho's citizens - require timely information to increase personal food production, adopt sustainable gardening and landscaping principles, and improve green spaces to improve surroundings.

What has been done
The Idaho Landscapes and Gardens website was developed and updated to provide easy public access to high quality, science-based horticultural information.

Results
Over 85,000 hits in 2018 on the website providing general access to information. Adoption of best management practices is improved among Idaho citizens for topics related to landscape and garden management.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)

205	Plant Management Systems
216	Integrated Pest Management Systems

Outcome #3

1. Outcome Measures

Master Gardener-Program Operations. The desired outcome is statewide Master Gardener program that operates according to state policies, ensuring cohesion, program branding and quality. Indicator: One indicator is the number of Master Gardener programs statewide that operate according to written policy. Coordinators will be surveyed to determine the operational status of each county program. Team Leader will provide the final percentage.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
MG Programs statewide need to comply with statewide policies to ensure cohesion, even as it is adapted for area needs.

What has been done
Data were collected to monitor if the counties with MG programs e.g., Ada, Bonner, Boundary, Nez Perce counties and the Palouse region followed statewide policies and program branding.

Results
Results indicated that MG programs in 20 counties followed statewide policies and program branding.

4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions, Health, and Social Services

Outcome #4

1. Outcome Measures

Green Industry Education-Certification Training. The desired outcome is green industry personnel with sufficient knowledge to pass public certification exams. Indicator: The Hort Team offers training in preparation for taking the Certified Nursery Professional exam. The number of participants passing the exams after Extension training is an indicator of program success.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Owners and managers within the horticulture industry require trained personnel to be effective and competitive.

What has been done
We helped organize the Green Collar College at the Idaho Horticulture Expo to teach basic horticultural principles.

Results
Over 250 industry employees and managers participated, making them more effective in helping consumers diagnose and resolve horticultural issues using sustainable principles.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
216	Integrated Pest Management Systems

Outcome #5

1. Outcome Measures

Master Gardener-New Certification: The desired outcome is a pool of newly trained Master Gardener volunteers to maintain or extend efforts in home horticulture outreach. Indicator: A stable or growing count of newly certified Master Gardeners is an indicator of program sustainability. Enter the number of new Master Gardeners certified during the past year.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	94

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The desire for Ada County residents to sustain home and commercial gardening practices and keep up on current research means there is a waiting list of applicants for the MG Program in Ada County. It has a excellent reputation and is very popular course, but it also takes much time to complete.

What has been done
This year, 35 people enrolled into the MG Program in Ada County.

Results
Of the total enrollment (n=35), 75% of them completed the MG course to be certified as Master Gardener. This indicates a stable count of newly certified Master Gardeners from last year.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems

216	Integrated Pest Management Systems
805	Community Institutions, Health, and Social Services

Outcome #6

1. Outcome Measures

Master Gardener-Retention of MG Volunteers: The desired outcome is a pool of returning trained, qualified, certified Master Gardener volunteers available for service within communities and counties statewide. Indicator: This is a measure of the effectiveness of ongoing Master Gardener training and retention programs. Enter number of active, certified Master Gardeners and Advanced Master Gardeners currently serving in your county(ies).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	207

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Retention of MG volunteers is important in making the MG Program viable from year to year as Advanced MGs assist in training the new first year MG students.

What has been done
An Advanced/Continuing MG Program was organized each year for returning MGs.

Results
Sixty-six people enrolled in the Advanced and Continuing MG program. Of the enrolled participants, 87% completed the course.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)

205	Plant Management Systems
216	Integrated Pest Management Systems
805	Community Institutions, Health, and Social Services

Outcome #7

1. Outcome Measures

O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
It is our responsibility to educate and train the next generation of scientists.

What has been done
Graduate students conducted research associated with this topic team.

Results
Graduate students were trained through research projects associated with this topic team and fulfilled advanced degree requirements by defending their work and presenting results at professional society meetings.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
202	Plant Genetic Resources
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (Time and family constraints; staff turnover; new educator)

Brief Explanation

Many people have very busy lives and with financial and family pressures, or having to be caregivers for older parents, they often don't have time to volunteer or commit to on going programs. We have found more recently that getting commitments from those who can contribute to their communities as volunteers is becoming more difficult, thereby making the volunteers we have even more precious to us.
Interest in gardening fluctuates with the economy and people's desire to gain skills for either home production of food or because they now have the time to dedicate to learning what they have wanted to learn during their entire lives, but never had the time due to family or job restraints.
There are several other local organizations that also offer horticulture classes including: the East Bonner County Library, Bonner County Gardeners Association, and the Native Plants Society. I have been able to partner with some of these organizations to help work with them to provide gardening education opportunities.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Nineteen class evaluations were completed to evaluate program impact. Percent increase in knowledge is listed by class. Classes consisted of Fruit and Ornamental Tree Selection and Proper Pruning (participants = 39 - 52% increase in knowledge); Vole and Gopher Management for Homeowners (participants = 36 - 47% increase in knowledge); Lawn Establishment and Maintenance (participants = 39 - 47% increase in knowledge); Berry Production and Outdoor Flower Pots (participants = 34 - 68% increase in knowledge); How to Garden (participants = 27 - 74% increase in knowledge); and Making Jam (participants = 27 - 58% increase in knowledge).

Key Items of Evaluation

The horticultural program in Fort Hall has grown both in quality and number of participants. Approximately 70% of the participants in our program have become active gardeners and now produce their own food. Families are becoming more engaged and active and are learning how beneficial and rewarding it is to grow their own food and develop a beautiful green space around their homes to improve their quality of life.

V(A). Planned Program (Summary)

Program # 4

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
124	Urban Forestry	2%		0%	
131	Alternative Uses of Land	5%		0%	
134	Outdoor Recreation	5%		0%	
601	Economics of Agricultural Production and Farm Management	5%		0%	
602	Business Management, Finance, and Taxation	3%		10%	
603	Market Economics	3%		0%	
604	Marketing and Distribution Practices	3%		0%	
605	Natural Resource and Environmental Economics	5%		20%	
608	Community Resource Planning and Development	10%		20%	
610	Domestic Policy Analysis	8%		0%	
802	Human Development and Family Well-Being	20%		0%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	10%		30%	
805	Community Institutions, Health, and Social Services	15%		0%	
806	Youth Development	3%		0%	
903	Communication, Education, and Information Delivery	3%		20%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	4.5	0.0	2.0	0.0

Actual Paid	4.9	0.0	1.3	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
132217	0	91129	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
132217	0	91129	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
319969	0	335059	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 4,555 direct educational contacts and 530,083 indirect contacts. Team members published three articles in refereed journals and one Extension publication, and they participated in projects funded by $669493.29 in grants.
Extension faculty delivered a variety of educational programs for local leaders and entrepreneurs in 2018. Courses include the Master Preparedness Program which brought a range of experts into communities to improve understanding and participants' decision-making skills, teaching topics like household first aid, home firearm safety and outdoor survival. Workshops in 2018 focused on marketing, financial management, computer basics, and food safety.
Other activities involved topics such as youth entrepreneurship, accessing higher education, promoting small business, local food systems, food security, bioregional planning, and youth and adult leadership. One team member organized a West Central Mountains Food Coalition.
Extension faculty served on local economic development boards and mentored local business start-ups. They also participated in regional economic development partnerships, including the Clearwater Economic Development Association and the Camas Community Lending Network. Statewide partnerships include the Small Business Development Center and the Idaho Rural Partnership (IRP). Results of partnerships include opening three food pantries and raising $8000 for an elementary school backpack food program. Team members participated in community meetings with county commissioners, chambers of commerce, and state legislators.
Due to the designation of the Lewis-Clark AVA (American Viticultural Area), an effort to assess site potential in the Clearwater Valley has been undertaken. Extension faculty conducted Ripple Effects Mapping exercises with a tri-state community review project, New York CYFAR team, Cornell University, the World Community Development Conference and the Idaho Non-Profit Center.

2. Brief description of the target audience

- Business owners and industry leaders
- Economic development professionals and community action team leaders
- Government agency personnel, including social services, law enforcement, and first responders

- Entrepreneurs, both current and future
- Elected officials and decision makers at state and local levels
- Community nonprofit organizations
- New leaders and individuals currently serving in leadership roles
- Local stakeholders
- Producers forming a partnership to strengthen their local food system (food co-op development)
- Rural communities
- Community and county educators and administrators
- High school students, college students, and youth
- Elders and citizens
- Faith-based leaders, youth, and adults
- Librarians
- Underserved populations including Hispanic women, Native Americans, and those challenged with historical poverty and historical trauma

In 2018, Idaho, Montana, and Wyoming community assessment delivery organizations were target audiences for a project on community assessment best practices and evaluation. These include Idaho Rural Partnership, Montana Economic Developers Association, and Wyoming Business Council. Rural community groups and residents in the three states are the ultimate target audience for this work and for the team's community conversation project as well.

3. How was eXtension used?

Used primarily as a resource for Extension professionals

V(E). Planned Program (Outputs)

1. Standard output measures

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	3666	529540	889	543

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	3	4

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Steering Committees/Teams formed

Year	Actual
2018	4

Output #2

Output Measure

- Materials/Curriculum developed

Year	Actual
2018	2

Output #3

Output Measure

- Presentations/Workshops delivered (one shot)

Year	Actual
2018	25

Output #4

Output Measure

- Series/Short Courses/workshops - organized and/or taught

Year	Actual
2018	7

Output #5

Output Measure

- Conference posters/presentations

Year	Actual
2018	7

Output #6

Output Measure

- Boards & Communities - Facilitated/Mentored/Coached

Year	Actual
2018	20

Output #7

Output Measure

- Communities served

Year	Actual
2018	36

Output #8

Output Measure

- Counties served.

Year	Actual
2018	37

Output #9

Output Measure

- Web-based educational materials

Year	Actual
2018	5

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Entrepreneurs: Current & future Idaho Entrepreneurs learn business practices and develop skills needed for starting a business. I: Number of participants learning skills
2	O: Customer: Small business owners and government organizations adopt customer oriented operating practices Indicator: Number of participants indicated adoption of practices. (customer service follow-up checklist)
3	O: Leadership: Incumbent and emerging leaders learn skills for community leadership positions. I: Number of participants with increased skills (pre/post test)
4	O: Leadership: New leaders will assume leadership roles. I: Number of new leaders serving in communities. (1 yr. follow up checklist/count)
5	O: Family Life: Users of web-based family life materials find useful information that addresses their needs. I: Number of participants accessing the materials who rate the information as useful.
6	O: Human capital development. I: Youth gain understanding of post-high school educational opportunities. (Retrospective pretest)
7	O: Regional business development: Economic and business development organizations collaborate at a regional level to offer comprehensive business training and support to local communities. I: Number of regions, counties, or clusters of communities establishing a regional business development effort. (Retrospective Post)
8	O: Social Capital Development: Community Partnerships will be developed through community networks and mentoring. I: Number of participants in network and mentoring relationships.
9	O: Spaces and Places: Student teams will develop design concepts that meet community planning and design needs. I: Completed design project.
10	O: Entrepreneurs: entrepreneurs establish or expand their businesses. I: Number of business owners extablishing or expanding their business. (Annual survey/3yrs.)
11	Improve the well-being of rural communities through cultivation of their economic resilience.

Outcome #1

1. Outcome Measures

O: Entrepreneurs: Current & future Idaho Entrepreneurs learn business practices and develop skills needed for starting a business. I: Number of participants learning skills

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	165

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Lacking a nearby licensed kitchen for producers and budding culinary entrepreneurs, the Teton Valley Kitchen (TVK) incubator was identified as an important strategy for developing food businesses. Although the TVK closed after 9 months, the need for business and food safety training for food entrepreneurs remains high.

What has been done
To help foster positive momentum for growing more viable food and farm businesses, as well as the sustainability of a shared-use certified kitchen in the vicinity, UI Extension, Teton County taught 4 free community workshops for 'food-preneurs' focused on food safety, business planning, product development, marketing, and distribution.

Results
Post-workshop survey evaluations indicated increased knowledge of food safety requirements, increased understanding about developing a food business plan, positive interest by participants in starting their own food business and increased interest in utilizing the space (N=54). Five known class participants have also expanded or started new food and value-added agriculture businesses since participating in one or more workshops. Partnerships were cultivated between the TVK, UI Extension, food and agriculture producers, nonprofit organizations, and government agencies and municipalities, resulting in increased social capital resources. This has led to educational and cultural events serving a variety of culinary needs and stakeholders throughout the area, including farm-to-table fundraisers and collaborative grant applications to support shared goals around the Teton food system.

4. Associated Knowledge Areas

KA Code	Knowledge Area

601	Economics of Agricultural Production and Farm Management
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
903	Communication, Education, and Information Delivery

Outcome #2

1. Outcome Measures

O: Customer: Small business owners and government organizations adopt customer oriented operating practices Indicator: Number of participants indicated adoption of practices. (customer service follow-up checklist)

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

O: Leadership: Incumbent and emerging leaders learn skills for community leadership positions. I: Number of participants with increased skills (pre/post test)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	19

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
People have the right to participate in the decisions and decisions-making processes that impact their current and future well-being, but they may not have the knowledge or access to effectively influence changes in their community.

What has been done
Extension delivered 2-day immersion leadership training focused on basic skills and knowledge of how to be a community leader.

Results
12 public, university, district and elementary school librarians from Hailey, Idaho Falls, Twin Falls,

Mountain Home, Glenns Ferry, Boise, and Burley completed the training.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services
903	Communication, Education, and Information Delivery

Outcome #4

1. Outcome Measures

O: Leadership: New leaders will assume leadership roles. I: Number of new leaders serving in communities. (1 yr. follow up checklist/count)

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

O: Family Life: Users of web-based family life materials find useful information that addresses their needs. I: Number of participants accessing the materials who rate the information as useful.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

O: Human capital development. I: Youth gain understanding of post-high school educational opportunities. (Retrospective pretest)

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

O: Regional business development: Economic and business development organizations collaborate at a regional level to offer comprehensive business training and support to local communities. I: Number of regions, counties, or clusters of communities establishing a regional business development effort. (Retrospective Post)

Not Reporting on this Outcome Measure

Outcome #8

1. Outcome Measures

O: Social Capital Development: Community Partnerships will be developed through community networks and mentoring. I: Number of participants in network and mentoring relationships.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	51

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
With many organizations competing for resources, there is a need for more formalized collaborative efforts among the various components and players in our local food system. Part of collaboration involves networking and mentoring relationships.

What has been done
Once a month, an educator facilitates meetings for the Teton Food and Farm Coalition (TFFC). This Teton-based group of both Jackson Hole and Teton Valley members is a result of a handful of grassroots meetings held since May 2016 with chefs, farmers, and others initially interesting in having farm-to-table events and a local food directory in Teton Valley.

Results
The group has assembled a mailing list of over 106 email addresses. Participation comes from 5 non-profit organizations and local farmers' market boards and a handful of farmers and food producers (5 producers are more regular participants). The group has collaborated on a local foundation and 2 USDA Agriculture Marketing Program grant applications. We are steadily forging forward on other shared projects and events, such as an online and printed food and farm directory and Teton Valley farm tours organized by the Idaho Farm Bureau and other partners.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
610	Domestic Policy Analysis
802	Human Development and Family Well-Being
805	Community Institutions, Health, and Social Services

806 Youth Development

Outcome #9

1. Outcome Measures

O: Spaces and Places: Student teams will develop design concepts that meet community planning and design needs. I: Completed design project.

Not Reporting on this Outcome Measure

Outcome #10

1. Outcome Measures

O: Entrepreneurs: entrepreneurs establish or expand their businesses. I: Number of business owners extablishing or expanding their business. (Annual survey/3yrs.)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Hispanic women and county and city officials identify need for more access to information regarding best business practices in the area, especially for aspiring business owners who are minorities.

What has been done
Extension offered Dream Builder in Idaho as an online option for entrepreneurial training.

Results
Two participants opened their businesses this year as a result of their participation in Dream Builder online courses.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management

602	Business Management, Finance, and Taxation
603	Market Economics
604	Marketing and Distribution Practices
608	Community Resource Planning and Development

Outcome #11

1. Outcome Measures

Improve the well-being of rural communities through cultivation of their economic resilience.

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)
Rural communities face challenges during economic downturn and often feel helpless. Although, there is great interest from these communities in being proactive and preserving their lifestyle through economic resilience.

What has been done
Research led to the development of a two-dimensional quantitative measure of resilience using observed differences between expected and actual employment in a rural area following a economic shock and distinguished the response to the shock from random variation.

Results
A journal article was published to assist rural communities, local governments, and community leaders develop strategies to foster economic resilience.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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

Interest among entrepreneurs in community-sourced capital for business development and expansion is increasing. This creates opportunities to build relationships between community-based/owned financial institutions, such as credit unions, and local entrepreneurs. Conversely, individual community members are seeking ways to invest in local businesses.
Economic factors have affected rural communities dramatically. They have not yet recovered from the recession. State legislatures appropriated funds from programs such as education during the recession, but haven't restored funding levels as the economy has improved. Competing public priorities such as tax cuts are the reason for lagging financing of education and the social safety net. Population changes, particularly in the southern part of the state have changed social dynamics and created new opportunities for partnerships and community revitalization, yet social differences are a barrier to taking advantage of these opportunities. Likewise, newcomers in many of Idaho's amenity rich communities tend to be older, retired, but with a high level of human capital, yet animosity toward newcomers tends to limit their ability to be involved in community development activities.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

15 participants from 13 separate communities attended the 'Leadership to Make a Difference Institute' at the Hailey Public Library. Twelve participants completed the training and returned completed evaluations for analysis. Segments taught during the 2-day institute included the Beginning of a Leadership Journey, Respecting Differences: Diversity & Inclusivity in Leadership, Building Teams that Go Beyond, Ensuring Meaningful Meetings, Responding to Conflict with Courage, and Your Leadership Journey. All of them agreed that they learned something from the training and are likely to apply what they have learned. About 66.7% agreed they are confident about using what they have learned and felt the instructional aids (binders, handouts) were helpful. Nearly 83.3% felt that the instruction will improve their library's ability to provide services for the public and the teaching tools (flipcharts, PowerPoints, quotes) were beneficial. 91.7 felt the instructors encouraged questions and interaction.

Key Items of Evaluation

Facilitating the Forest Collaborative is the hardest part of my job, however I am happy to report this effort has met it's goal of creating a recommendation to the forest service that

all members of the collaborative can give consent. The participants include diverse stakeholders with different desires for the management of public lands. The collaborative includes participants from federal, state, and county agencies including, NOAA, Fish and Wildlife, Forest Service, Idaho State Parks, and Valley County. The Nez Perce tribe is also part of the collaborative with diverse public stakeholders representing groups advocating for motorized vehicles, non-motorized access, and private property owners with outstanding land rights. A representative from Senator Crapo's office sits in on these discussions working towards shared agreement about public land access on Forest Service land. The collaborative is in the process of drafting a letter to submit on behalf of this collaborative effort that has met monthly for the past six years. This is the third area they have addressed with each area taking two years to come to a consensus decision. The group will not continue to meet after this final recommendation has been made, however working together with passionate and diverse stakeholders for six years is an accomplishment.

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Global Food Security and Hunger: Dairy

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	20%		20%	
302	Nutrient Utilization in Animals	20%		20%	
305	Animal Physiological Processes	20%		20%	
307	Animal Management Systems	20%		20%	
308	Improved Animal Products (Before Harvest)	0%		10%	
311	Animal Diseases	20%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	1.9	0.0	2.5	0.0
Actual Paid	3.0	0.0	1.9	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
161966	0	98782	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
161966	0	98782	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
185009	0	672208	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 3,892 direct educational contacts through Extension and 16,220 indirect contacts. Team members published five articles in refereed journals and participated in projects funded by $604,813.11 in grants. Team members were active in 6 counties.
Dairy Management
Maintaining production efficiency and profitability continues to be a challenge for the Idaho dairy industry. Management techniques are available to improve facility planning, reproductive efficiency, herd nutrition, feed identification, genomics, dairy housing, lameness, electrical resistance, milk quality, mastitis control, cow comfort, production costs, market outlook, risk assessment, tractor operation/safety training and dairy margin protection. Based on input from our dairy advisory committees, the Idaho Dairy Extension team conducts dairy tours, on-farm trainings, and producer meetings to share new strategies and provide support.
The team continued to run collaborative multi-institutional dairy genomics and fertility workshops as well as teaching dairy cattle nutrition at international seminars, presenting stray voltage updates, lectures about dairy housing and dairy forage and editing facilities section of DAIReXNET.
Dairy Workforce Development
Dairy topic team members have continuously developed, improved, and delivered training for dairy workforce development. New emphasis has been placed on dairy middle management training including a roundtable in Spanish. Topics covered in a Spanish-language milker school included milking systems, milk quality and the Pasteurized Milk Ordinance (PMO), milker responsibilities, and biosecurity and farm safety procedures.
The increase in Hispanic worker employment in Idaho's dairy industry prompted dairy Extension faculty to develop some trainings in both English and Spanish. Bilingual trainings improve the knowledge and skills of these workers, and include artificial insemination (AI) schools, milker schools, and a Hispanic workers' protection and safety program.

2. Brief description of the target audience

Dairy employees (English/Spanish speakers): The team's audience is focused on developing and delivering a diverse training program targeting Spanish-speaking dairy employees. Support is also provided to English speakers, dairy producers, veterinarians, veterinarian students, employees of AI companies, middle-herd managers, and members of allied industry including ABS. Audience venues include farm visits, dairy meetings, and DAIReXNET (for producers, allied industry, and Extension). The dairy industry and Idaho power companies are the target audiences for the team's stray voltage research.

3. How was eXtension used?

Dairy team members contributed to DAIReXTNET, and one team member is lead editor for facilities section of DAIReXTNET.

V(E). Planned Program (Outputs)

1. Standard output measures

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	3757	16000	135	220

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	0	5	5

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Winter Dairy Forums

Year	Actual
2018	4

Output #2

Output Measure

- Milker schools

Year	Actual
2018	2

Output #3

Output Measure

- Calf Schools

Year	Actual

2018	0

Output #4

Output Measure

- Artificial Insemination Schools

Year	Actual
2018	4

Output #5

Output Measure

- Feeder Schools

Year	Actual
2018	0

Output #6

Output Measure

- Popular Press articles

Year	Actual
2018	3

Output #7

Output Measure

- Abstracts and Proceedings

Year	Actual
2018	14

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Dairy Producers and workers will increase knowledge by attending dairy schools and dairy forums. I: Number attending schools.
2	O: Dairy workers will increase knowledge and understanding of dairy management practices. I: Percent knowledge change by attendees (as evaluated with pre/post testing)
3	O: Sound dairy management practices will be adopted by dairy operations as a result of attending the management schools. I: Percent of participants with intent to adopt recommended dairy management practices (as evaluated with pre/post testing).
4	O: Dairy workers will use proper techniques taught in dairy education programs (e.g., AI techniques, feeding adjustments, milking techniques). I: Percent of participants demonstrating mastery (assessed at dairy education programs)

Outcome #1

1. Outcome Measures

O: Dairy Producers and workers will increase knowledge by attending dairy schools and dairy forums. I: Number attending schools.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	353

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Efficient reproduction is key to dairy profitability.

What has been done
Dairy Genomics workshops and presentations were held in a variety of locations of Idaho.

Results
65 workshop participants reported that they had gained new knowledge in the area of dairy genomics following their participation in the program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
311	Animal Diseases

Outcome #2

1. Outcome Measures

O: Dairy workers will increase knowledge and understanding of dairy management practices. I: Percent knowledge change by attendees (as evaluated with pre/post testing)

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

O: Sound dairy management practices will be adopted by dairy operations as a result of attending the management schools. I: Percent of participants with intent to adopt recommended dairy management practices (as evaluated with pre/post testing).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	38

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Better economic and risk management of the dairy enterprise and better knowledge of the risks associated with dairy financial management is needed

What has been done
The Risk Assessment and Management Education for Dairy Farmers in the Western Region program consisted of three workshops for dairy producers and top managers. We presented on dairy financial and risk management at the Hispanic middle herd management program.

Results
As a result of the workshop, a total of 38 participants in both groups reported increased knowledge of financial management, risks, and tools. They also indicated that they planned to use some of the tools in their farm.

4. Associated Knowledge Areas

KA Code	Knowledge Area

301	Reproductive Performance of Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
311	Animal Diseases

Outcome #4

1. Outcome Measures

O: Dairy workers will use proper techniques taught in dairy education programs (e.g., AI techniques, feeding adjustments, milking techniques). I: Percent of participants demonstrating mastery (assessed at dairy education programs)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	48

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Worker accidents at dairies have been rising. Knowledge of proper techniques is needed in order to combat the rate of worker accidents.

What has been done
We developed a tractor safety class and delivered on demand to calf raising facilities

Results
43 dairy workers increased their knowledge of tractor and farm machinery safety.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
311	Animal Diseases

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The two biggest external factors affecting UI Dairy Extension are 1) the dairy economy, and 2) state and federal appropriations. The dairy economy has been depressed recently as milk price has been hovering at or below cost of production for Idaho dairy producers. State and federal appropriations for UI Dairy Extension have decreased over the last 18 years.
Dairy farmers are continuing through a depressed financial period, with low milk prices. Commodities prices remain low worldwide, with milk prices below cost of production. This situation has held or delayed investments in research and Extension programs that do not have a heavy economic factor on it.
Immigration is the second most important factor affecting the dairy industry. Lack of workers coupled with extremely low unemployment rates has drastically affected the availability of trained and untrained labor force for dairies. This has resulted in a competition among producers to capture and hold workers.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

In response to Idaho Dairyman's Association request, we tested if a 500 ohm resistor accurately reflects electrical resistance of Idaho dairy cows. Our goal was assess the contact resistance of several pathways through the cow and to measure pathway resistance of cows on commercial dairies. Key results are as follows: Contact resistance is reduced when the cow stands on wet concrete and manure versus dry concrete. In a convenience survey of commercial dairies, we observed that cows are exposed to wet concrete surfaces and manure at the feed manger, at the water troughs, at cow alleys, and in the milking parlor. Freshly delivered TMR (total mixed ration) lowers the contact resistance of the concrete feed bunk surface by making the surface damp to touch. Cows further lower the contact resistance by licking the feed bunk surface to clean up remaining feed as licking makes the surface wet. Direct precipitation will also decrease contact resistance. In a convenience survey, we observed that many commercial dairy operations in Idaho are susceptible to lower contact resistance due to exposure to rainfall in the housing and feeding areas. A dry hair coat has very high contact resistance. Direct precipitation that wets both the hair and skin will dramatically lower contact resistance of the cow when she touches the feed manger stanchion or when she touches parlor pipework during milking.

Key Items of Evaluation

The two tractor and machinery safety classes developed and offered at calf raising facilities were successful and well received. The manager of the facilities and their safety chief, who has years of experience on safety in other industries, choose Extension for education of

new workers on their calf ranches in the future.

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Family Finance

☑ 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	100%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	5.9	0.0	0.0	0.0
Actual Paid	4.1	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
62972	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
62972	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
286343	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The family finance team reported 7,194 direct contacts and 79,581 indirect contacts, and participated in projects supported by $21,446.83 in grant funds. The family economics team created and delivered

dozens of presentations for a variety of audiences. Adult education was delivered across the state via multiple programs, workshops, and classes. Topics centered on financial management skills and included budgeting, credit management, recordkeeping, Budgeting for Graduation, 40 Money Management Tips, Organizing your Financial Paperwork, health care insurance, Medicare, late-in-life financial issues, planning retirement, decluttering and downsizing, and protecting against identity theft. One team member partnered with the AARP New Knowledge Adventures program, and this helped to create an innovative method to increase program awareness and participation. Team members taught youth financial education such as Welcome to the Real World and the Northwest Youth Financial series, as well as the popular credit app Night of the Living Debt.

2. Brief description of the target audience

This team's target audience included people of all ages. Examples include 4-H members, adult 4-H volunteers, county residents, Head Start counselors and parents, low-income individuals, AARP, senior centers, clubs, associations, teachers, parents, youth group leaders, after-school youth, school-age youth, general public, Hispanics, college students, inmates, retirees, elderly, credit union league members, mentally/physically disabled, and family business owners.
The Basic Financial Management target audience included young adults, people who are new to financial management (i.e., widows, divorcees, immigrants), and individuals who needed to improve their financial management practices. Train-the-trainer activities target professionals who work with people with low income and/or financial challenges.
The Financial Security in Later Life target audience included adults of all ages planning for their own financial future, as well as adults who are caretakers of elderly relatives and friends. Train-the-trainer activities targeted professionals who serve elderly clients.
The Youth Financial Literacy target audience included youth teachers, librarians, youth group leaders, and parents.

3. How was eXtension used?

One team member participates in the leadership team for the Financial Security community of practice

V(E). Planned Program (Outputs)

1. Standard output measures

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	4317	79511	2877	70

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	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Newsletter articles published; print or electronic

Year	Actual
2018	17

Output #2

Output Measure

- Popular Press articles

Year	Actual
2018	6

Output #3

Output Measure

- Professional or paraprofessional trainings

Year	Actual
2018	22

Output #4

Output Measure

- Classes, seminars, and workshops

Year	Actual
2018	173

Output #5

Output Measure

- Websites developed or updated

Year	Actual
2018	2

Output #6

Output Measure

- Lesson/curricula developed, published, distributed

Year	Actual
2018	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Participants increase awareness of effective financial management practices. I: Number of participants reporting awareness on end-of-class evaluations.
2	O: Participants gain new personal finance knowledge. I: Knowledge gain reported on end-of-program evaluations.
3	O: Participants adopt recommended financial practices. I: Participant responses on end-of-program and follow-up evaluations.
4	O: Extension personal and family finance information is accessible to clientele, including new audiences, through Extension web sites, social media, webinars, and use of technology, and information displays. Indicator: Number of website sessions and pages visited. Number of social media followers. Number of participants in Adobe Connect, chat, webinars, or other trainings offered via technology. Number of people receiving information from displays.
5	O: Participants intend to adopt recommended financial practices. Indicator: Participant responses on end-of-program and follow-up evaluations.
6	O: Participants will share awareness, knowledge gained, and resources with others following the train-the-trainer model. Indicator: Number of total people reached with personal and family finance information.

Outcome #1

1. Outcome Measures

O: Participants increase awareness of effective financial management practices. I: Number of participants reporting awareness on end-of-class evaluations.

2. Associated Institution Types

- 1862 Extension

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)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #2

1. Outcome Measures

O: Participants gain new personal finance knowledge. I: Knowledge gain reported on end-of-program evaluations.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	1768

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Identity theft is the fastest growing crime in the US. With an identity stolen every 2 seconds, no one is immune from these criminals seeking out information that could lead them on a spending rampage, a visit to the Dark Web or to other stalking activities. Learning to be savvy about ALL information (not just credit reports) is the new norm.

What has been done
Using my updated workshop on Identity Theft, I created three versions of the class to meet participant need: a 50 minute version, a 1 hour version and a full 2 hour version which contains all the information participants need to guard against identity theft and fraud both in person and on-line. It covers cyber security, social media and high-tech tools to stay ahead of the criminals. I have taught these classes 19 times to all age group audiences.

Results
I begin every presentation with "I do not want to scare you. But I will. By the end of the presentation, you will be aware of the risks of identity theft and how to avoid them." I always deliver. This is one of my most requested classes and gets the most "ohhhs and ahhs" from the audience. Post-evaluations show "knowledge gained" comments like: "don't carry SS cards in your purse," "shred or burn everything ? don't let cc out of site, even at restaurants," "check credit and freeze it," "do not freely give out info about yourself," "personal and financial is very important," "don't answer #'s you don't know," "watch what you post," "stronger passwords," "be careful on Facebook," "turn off the 'location' app on phone," and "check on the 4th credit report." Much of this information is new to audiences. At the end, I always receive comments like this, "This is one of the most informative presentations I've attended" and "Great lecture!! One of the best!"

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #3

1. Outcome Measures

O: Participants adopt recommended financial practices. I: Participant responses on end-of-program and follow-up evaluations.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	120

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
With busy schedules, emotional attachments, and too much 'stuff,' feeling out of control and stressed can lead to or exacerbate significant health issues. Reducing clutter can help reduce stress and unnecessary trips to the doctor. The CDC states that 80% of our medical expenditures are related to stress. Disorganization results in 80% of the clutter in most homes. 71% of polled participants said their quality of life would improve if they were better organized.

What has been done
Extension taught the Declutter Your Life and Reduce Your Stress class 8 times in several north Idaho locations. This interactive class consists of warning signs, tools, "clutter classification" (a fun group discussion), organizational strategies and tips, and helpful resources for removing/rehoming the unneeded things.

Results
Participants were given pre-, post- and follow-up surveys. Participants were asked if they could define their clutter and simplify their belongings, 17% agreed before class, 100% were confident (strongly agree and agree) they would start this process after class, and 80% had started this process as of the 6 month follow-up. (Not all participants completed the follow-up; number is based on responses received.) When asked about transferring objects that were no longer needed and asking for help if they were having difficulty rehoming, 28% agreed at the beginning, 94% strongly agreed or agreed at the end and 80% said they had done this by the 6 month follow-up. Thinking about where an item is going to 'live' when it gets to your home: 50% said they did this before the class, 94% said they would practice this after the class and 80% said that they are practicing this. Stakeholders' greatest challenge would be to 'let go' but they are 'committed' to the process.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #4

1. Outcome Measures

O: Extension personal and family finance information is accessible to clientele, including new audiences, through Extension web sites, social media, webinars, and use of technology, and information displays. Indicator: Number of website sessions and pages visited. Number of social media followers. Number of participants in Adobe Connect, chat, webinars, or other trainings offered via technology. Number of people receiving information from displays.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	1982

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Reaching youth and stakeholders with youth personal finance information and programs.

What has been done
Website and program downloads.

Results
1500 game downloads and website visits helped clientele receive educational information and knowledge.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #5

1. Outcome Measures

O: Participants intend to adopt recommended financial practices. Indicator: Participant responses on end-of-program and follow-up evaluations.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #6

1. Outcome Measures

O: Participants will share awareness, knowledge gained, and resources with others following the train-the-trainer model. Indicator: Number of total people reached with personal and family finance information.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	165

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Prison systems are limited with educational materials and online resources that can be used when rehabilitating inmates prior to release. Inmates are allowed to use computers but not the Internet. Many of our resources are Internet-based. By providing educational resources and education to inmates, studies have found that 'serious' inmates, who see the benefit of educational opportunities, do not re-enter the prison system and become tax-paying citizens not revolving inmates in the system.

What has been done
Extension provided a National Endowment for Financial Education High School Financial Planning Program and a Consumer Financial Protection Bureau Your Money, Your Goals train-the-trainer workshop for prison staff from the North Idaho Correctional Institute, Idaho Correctional Institution and Juvenile Corrections in Lewiston.

Results
Prison staff reach over 1,262 inmates on any given day. These free educational resources provide inmates with basic financial education and tools to be successful upon re-entry. The inmates that are released from these 3 prisons present a low recidivism rate. NICI, for example, has a 30% recidivism rate. The inmates that come here do not come back. The prison credits our work (educational resources, financial workshops, life skills presentations) with the reason for this. When inmates are treated as worthy students, they become worthy citizens. These resources help them to "do it right" and make healthy choices in the future. Using the average number of inmates that pass through the doors at any time, the calculated number of people reached is well over 26,000 with the NEFE program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Competing Public priorities
- Populations changes (immigration, new cultural groupings, etc.)
- Other (changes in administrative duties; finding audiences)

Brief Explanation

The economy and competing public priorities may have affected outcomes.
Idaho is a rapidly growing state. The needs of the changing population include timely and relevant personal finance education.
The fear of identity theft and more Baby Boomers getting settled in their retirement years have also brought new direction to my programming. I am doing many more classes on these topics along with one-on-one visits to help individuals and couples secure and protect their futures.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Youth entrepreneurship evaluation results indicated 94% reported that they learned new information about the skills necessary to be an entrepreneur. 95% of students reported they learned new ideas regarding business challenges. 90% learned new information about how to set a goal, and 93% post-workshop felt confident they could become an entrepreneur someday. Our target audience was Hispanic/Latino youth, and our evaluation results indicate that 75.8% of students self-identified as Hispanic/Latino.

Key Items of Evaluation

In one junior high class I was teaching the value of saving money early in life. I asked the question "How much money would you have to save and invest every day of your life to retire with a million dollars in your bank account?" Of course, there were some high answers, but the answer is actually $2.50 (assuming a 9% interest rate which is lower than the average return of a relatively safe index fund.) After class there was one girl who responded "That's my goal now!" It's unlikely that 13 year old girl went home and started saving $2.50 a day, but perhaps ten years from now she'll start saving $5 a day because she remembered that lesson and the excitement that saving can actual bring.

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Farm and Ranch Management

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water	0%		5%	
132	Weather and Climate	0%		5%	
601	Economics of Agricultural Production and Farm Management	25%		25%	
602	Business Management, Finance, and Taxation	25%		15%	
603	Market Economics	15%		5%	
605	Natural Resource and Environmental Economics	15%		20%	
606	International Trade and Development	10%		10%	
609	Economic Theory and Methods	5%		5%	
610	Domestic Policy Analysis	5%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	3.5	0.0	2.0	0.0
Actual Paid	7.3	0.0	2.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
160312	0	72513	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
160312	0	72513	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
552334	0	787358	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Farm and Ranch Management team reported 8,389 direct educational contacts and 43,411 indirect contacts. Team members published seven refereed journal articles and four University of Idaho Extension publications. Team members participated in projects supported by $127,295.32 in grant funds.
The team provided a variety of training activities related to farm management, farm succession and estate planning, bull recordkeeping, risk management, pre-harvest marketing plans, strategic planning, financial fitness, balance sheets, and enterprise budgets. Individual schools included Bean School, Beef School, Cereal School, and Forage and Grazing School.
Additional classes include Farm Management, water rights, grain marketing education, 10 Acres and A Dream (for new rural landowners), Financial Fitness, and Starting Your Sustainable Small Farm in Idaho courses.
A successful program piloted in 2014 and continued in 2018 included the Ag Outlook seminars. These events attract local producers and supporting industry members including bankers, processors, suppliers, etc., to learn about recent trends in their businesses and to discuss the likely scenarios for the near future.
Other important tools developed and used by UI Extension include IRM red-books, hay harvesting cost calculator, and updated enterprise budgets. These budgets are distributed at workshops and other events and help improve producers' ability to make sound financial decisions about their operations.
Other activities include pesticide recertification workshops; updating and presenting in public hearings for the Ag Economics section of the Middle Snake River Water Resource Commission report; working with students; farm business management course; presentations on international trade and related policy issues, profitability crisis in dryland grain production, and economics of lime applications in the Pacific Northwest; and Women in Ag workshops and the Bee Survey Project.

2. Brief description of the target audience

The target audience is comprised of farmers, ranchers, and agribusiness managers in Idaho who are interested in improving their business management skills. This includes farmers and ranchers who are struggling financially and need to evaluate alternatives and may need help with basic financial management concepts, as well as highly successful farmers and ranchers who want to stay at the cutting-edge by improving efficiency and evaluating alternative crops, cropping systems, or alternative livestock and livestock production systems. Other target audience members include Native American farmers and ranchers, farmers and farm workers with disabilities, female producers, small acreage and market-direct producers, lenders and loan holders, industry personnel, agricultural policy makers, planning and zoning boards, water boards, insurance agents, local food consumers, service providers to farm and ranch managers, Extension educators, postsecondary agricultural students and instructors, and state and local

government.

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
Actual	8185	40011	204	3400

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	4	7	11

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Farm Management Schools

Year	Actual
2018	1

Output #2

Output Measure

- Crop or Livestock Costs and Returns Estimates Published

Year	Actual
2018	3

Output #3

Output Measure

- Media Contacts: print, radio & TV

Year	Actual
2018	3

Output #4

Output Measure

- Workshops/presentations/classes/webinars at Commodity Schools/Conferences, Farm Management Schools, Idaho Legislature, or other appropriate venues

Year	Actual
2018	54

Output #5

Output Measure

- One-on-one consultations: office visits, phone contacts, email

Year	Actual
2018	175

Output #6

Output Measure

- Hits on Idaho AgBiz web site

Year	Actual
2018	4108

Output #7

Output Measure

- Popular press articles and commodity school proceedings

Year	Actual
2018	4

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Educational material is widely available to clientele. I: Number of publications, farm management or crop budget data CDs, or other resources distributed.
2	O: Clientele motivated to obtain knowledge and/or learn new management skills. I: Number of clientele attending educational programs.
3	O: Clients learn about new issues, management practices or marketing tools. I: Number of clientele attending educational programs that indicate a change in knowledge.
4	O: Clientele make management changes by applying new knowledge about issues, management practices or marketing/risk management tools. I: Number of clientele attending educational programs that indicate an intention to change a practice or that have changed a practice.

Outcome #1

1. Outcome Measures

O: Educational material is widely available to clientele. I: Number of publications, farm management or crop budget data CDs, or other resources distributed.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	108

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Producers have a need to maintain better records on bull data such as age, fertility, and number of years ran on rangeland or pasture.

What has been done
We developed a record-keeping protocol to assist producers with this issue.

Results
Thirty-seven producers completed the paperwork accurately and in a timely fashion. They maintain a record as does the Extension office. These practices have greatly improved bull data for a large range unit on the Fort Hall Reservation.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
603	Market Economics
605	Natural Resource and Environmental Economics
606	International Trade and Development

Outcome #2

1. Outcome Measures

O: Clientele motivated to obtain knowledge and/or learn new management skills. I: Number of clientele attending educational programs.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	753

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Farm and ranch managers face many challenges given the risks inherent in their occupations.

What has been done
We provided programming and tools on various farm financial management subjects, including enterprise budgeting and investment analysis and the need for starting and saving retirement accounts.

Results
Producers are better able to manage their farms and ranches, decreasing risk and stress while increasing profits for today and tomorrow.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
603	Market Economics
605	Natural Resource and Environmental Economics
606	International Trade and Development

Outcome #3

1. Outcome Measures

O: Clients learn about new issues, management practices or marketing tools. I: Number of clientele attending educational programs that indicate a change in knowledge.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	34

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Dairy producers facing adverse market conditions are in need of risk-management tools.

What has been done
We conducted educational workshops across Southern Idaho addressing various risk-management tools.

Results
34 participants gained knowledge about different risk-management tools to use in their farms.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
603	Market Economics
605	Natural Resource and Environmental Economics
606	International Trade and Development

Outcome #4

1. Outcome Measures

O: Clientele make management changes by applying new knowledge about issues, management practices or marketing/risk management tools. I: Number of clientele attending educational programs that indicate an intention to change a practice or that have changed a practice.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	74

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
According to the USDA, over 70% of farmland will transition before 2028 and 50% of the agricultural operators do not have a plan in place. Since the farm and ranch population in the US is growing older, the need to transition the changing of the guard in farm or ranch management is widespread.

What has been done
Educators taught a 4-week workshop in three Magic Valley communities, where participants came together 1 day a week. The class taught principles regarding family relationships and how to work together. The classes gave ideas to help producers have alternatives from which to choose for the transition of the operation and succession planning. An accountant, a financial planner, and a lawyer met with class participants to help answer questions. Our classes are designed to help with this critical transition from one generation to the other.

Results
As a result of these classes, 100% said they learned or gained knowledge regarding retirement planning. 58% had held a family meeting after the class to help with the transfer of management and ownership. 67% developed a mission statement to guide the business for the future. 58% have started a succession plan and of those, 57% were 75% complete with a plan. By completing succession plans, the class participants protected $32 million in assets. Our respondents are also investing for their retirement. 50% of the respondents are putting $10,000/year into retirement accounts, 17% are put-ting $15,000/year, 17% are putting in $20,000 and 16% stated another amount.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
603	Market Economics
605	Natural Resource and Environmental Economics
606	International Trade and Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The economy and government regulations play a large role in how producers maintain records and participate in farm business management courses. Cost and timing of classes is also a factor.
The economy and the volatility of the markets are forcing farmers and ranchers to find more secure ways to ensure financial success. The government has decreased the amount of regulations that farm/ranch succession has had to deal with over the years. These new regulations are opening up the possibilities of owners to be able to more easily pass assets on.
Agribusiness is Idaho's largest industry. Monitoring the financial health and well-being of Idaho agriculture is a constant concern for policy makers and industry leaders throughout the state. The financial condition of agriculture can be extremely volatile. In the past, timely information has not been available for state legislator's regarding the financial condition of Idaho agriculture.
The tri-fold is the most widely circulated publications CALS has ever produced. The information was reported in every major and minor newspaper in Idaho and the Northwest. The financial condition is the only extension program given as testimony to the state legislature. The information is the basis for numerous agriculture conference and workshops throughout the year (Food Producers, the President and Provost).
This financial conditions program has propelled the University of Idaho to be the foremost spokesperson for Idaho agriculture. Without this program, CALS would have less presence with the state legislature, newspaper visibility, and recognition by other agriculture groups in Idaho. The result is that CALS has eclipsed other ag groups in testimony before the state legislature. I will get requests throughout the year from legislators, Lt Governor, Farm Bureau, and many other groups for additional analysis or presentations.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Most participants had a rudimentary knowledge of succession and the pitfalls. Our class was able to do a pretest to help gauge this knowledge. 92% increased knowledge in the use of personality profiling to understand the next generation better, learned more tools to use for estate planning such as wills and trusts, experienced dialogue on how to discuss succession planning with the rest of the family, and worked on goals and a mission statement to help guide the succession transition. 100% increased their knowledge of retirement planning. 67% increased their knowledge of managing resources and resource inventories. We also did a follow-up survey where we learned that 58% of participants actually held a family meeting as a result of the classes taught. 67% developed a mission statement and set goals for the farm business and its future. 58% did an evaluation of the farm/ranch assets as a result of the class to see what is in the estate. Nearly 58% have also started to develop a succession plan with 75% of those completing a plan.

Key Items of Evaluation

One family told us,"We are so happy to have taken the estate planning class. The class allowed us to be able to retire. We just didn't see how that was going to happen prior to your class. Because of the class, we found which children really wanted to be part of the operation in the future, and we found that most of the other children wanted that sibling to have the farm. This information was found in a family meeting that we practiced in your class. With the role playing, we were more prepared to have the conversation. We found there was not really that much dissension among our children like we thought there might have been. We had worried all these years for nothing. Now that doesn't mean there wasn't some angst for some of the assets, but we came away with a plan that made us all very happy. We used the lawyer that helped in the class and he was great. We also started saving and our children and now saving for their own retirement from what you taught us. Thanks for a great class!"

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Food Safety

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	5%		20%	
503	Quality Maintenance in Storing and Marketing Food Products	20%		20%	
504	Home and Commercial Food Service	30%		0%	
603	Market Economics	0%		20%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	30%		40%	
722	Zoonotic Diseases and Parasites Affecting Humans	5%		0%	
723	Hazards to Human Health and Safety	10%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	3.7	0.0	2.0	0.0
Actual Paid	5.1	0.0	3.3	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
92143	0	189692	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
92143	0	189692	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
360230	0	1093063	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 7,360 direct contacts and 916,162 indirect contacts in 2018. Team members published in one refereed journal.
Team members taught Advanced Master Food Safety and Master Food Safety Advisors again in 2018 delivered to improve skills and enhance volunteer retention. Preserve@Home, a web-based course, was also taught by educators. Ready, Set, Food Safe classes were updated with the revised Idaho food code as well as a Teton County Food Business workshop teaching food analysis for businesses. Idaho children participated in Germ City at elementary schools across the state while more completed a handwashing workshop. Food safety faculty and Master Food Safety Advisors presented workshops on food safety instruction through multiple just-in-time client calls, and they tested hundreds of pressure canner gauges, many of which needed to be replaced for safety reasons.
One team member is working on "Can It! Freeze It! Dry It!" food safety videos in partnership with a Family and Consumer Sciences (FCS) Extension educator and an FCS program coordinator in Ada County. Other activities include presenting about pressure cookers, a cutting board survey, proper meat temperatures, FSMA related food safety trainings, FSMA Produce Safety for Growers, After the Harvest food preservation, and implementation of a garden in an alternative school.
Direct education is supplemented by brochures, newsletters, and newspaper articles that reach thousands of additional learners each year.

2. Brief description of the target audience

Consumer Food Safety Programs / Just in Time Food Safety / Preserve@Home -- Consumers who need specific information to keep food safe or to avoid risky foods, including seniors, youth, adults, parents of young children, volunteers who cook for groups, consumers who want food preservation information delivered online or on the phone, and others.
Food Service Food Safety Training -- High school and college students in foods classes and adult food service workers.
Hand Hygiene Education -- Elementary age children, families and children at county fairs, and adults at health fair settings.
Other target audiences include Idaho regulatory personnel, Idaho dairy food processors and manufacturers, food entrepreneurs, and seafood processors.

3. How was eXtension used?

eXtension was used to deliver Preserve@Home.

V(E). Planned Program (Outputs)

1. Standard output measures

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	4711	913725	2649	2437

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	0	1	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of food safety calls answered - includes call to sec/MFSAs

Year	Actual
2018	1017

Output #2

Output Measure

- Number of new certified Master Food Safety Advisors.

Year	Actual
2018	17

Output #3

Output Measure

- Number of re-certified Master Food Safety Advisors.

Year	Actual
2018	97

Output #4

Output Measure

- Number of students taking Preserve-at-Home

Year	Actual
2018	185

Output #5

Output Measure

- Students receiving a RSFS certificate.

Year	Actual
2018	2021

Output #6

Output Measure

- Number of participants in hand hygiene education program

Year	Actual
2018	1789

Output #7

Output Measure

- Number of people participating in food preservation classes.

Year	Actual
2018	548

Output #8

Output Measure

- Number of individuals receiving ServSafe certification.

Year	Actual
2018	0

Output #9

Output Measure

- Number of classes taught by MFSA volunteers

Year	Actual
2018	17

Output #10

Output Measure

- Number of food preservation equipment safety checks (pressure gauge tests)

Year	Actual
2018	402

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: People use Just in Time Food Safety Information to help them make decisions about food preparation, storage, etc. I: Number of people who describe that they will use requested advice.
2	O: Master Food Safety Advisors-Knowledgeable citizens volunteer to help others learn and adopt safe food practices. I: Number of volunteer hours logged by Master Food Safety Advisors.
3	O: Food Service Food Safety Training-High school students are prepared to work in food service jobs. I: Number of students passing the RSFS exam and becoming certified.
4	O: Hand Hygiene Education-People will practice improved hand hygiene for reduction of colds, flu and foodborne illness. I: Hand Hygiene Education-Program participants indicate their intention to adopt recommended health practices.
5	O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.
6	O: Interested consumers will change food preservation practices after attending University of Idaho Extension food preservation classes taught by University of Idaho Extension. Indicator: Number of people indicating they will change their food preservation practices.
7	O: People use Just in Time Food Safety information to help them make critical decisions about the safety of food preparation, storage and preservation practices. Indicator: Number of food safety questions categorized as safety rather than quality related.
8	O: People use Just in Time Food Safety Information to help them make critical decisions about the safety of food preparation, storage, and preservation practices. Indicator: Number of people who describe that they will use UI Extension for other questions.

Outcome #1

1. Outcome Measures

O: People use Just in Time Food Safety Information to help them make decisions about food preparation, storage, etc. I: Number of people who describe that they will use requested advice.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	688

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Many people are faced with critical food safety questions with their personal and family's health at risk. They contact their local Extension office wanting to know critical food safety information immediately. They need information to make decisions about food safety issues that are happened at that time.

What has been done
We answered 120 questions using Just in Time food safety, which allows us to give information quickly to our community members.

Results
100% of those receiving answers to 120 questions indicated they will use the information that was provided.

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products
504	Home and Commercial Food Service
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
723	Hazards to Human Health and Safety

Outcome #2

1. Outcome Measures

O: Master Food Safety Advisors-Knowledgeable citizens volunteer to help others learn and adopt safe food practices. I: Number of volunteer hours logged by Master Food Safety Advisors.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	1253

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
FCS educators developed the Master Food Safety Advisor programs to increase capacity to meet the demand for Consumer Food Safety and Food Preservation Education. The use of volunteers has increased the reach of this program in the community.

What has been done
A First Year Master Food Safety Advisor program is offered annually every Spring, to train and certify new volunteers. An on-going Advanced Master Food Safety program is offered through the year to train, support, and re-certify volunteers who completed the first year program.

Results
We trained and supported a total of 71 MFSA volunteers from 2016-2018. These volunteers reached a total of 5,603 contacts through 48 different class and events, returned 2,237 volunteer hrs. valued at $54,001($24.14/hr.Independent Sector Rate)

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products
504	Home and Commercial Food Service
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
723	Hazards to Human Health and Safety

Outcome #3

1. Outcome Measures

O: Food Service Food Safety Training-High school students are prepared to work in food service jobs. I: Number of students passing the RSFS exam and becoming certified.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	21

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Food service workers need to be properly trained in safe food handling practices in order to prevent food borne illness.

What has been done
We taught 2 classes of Ready, Set, Food Safe to students at alternative schools for troubled youth.

Results
All of the 21 students who took the classes were successful in passing the test and therefore received their certification. These students are now qualified to work in the food service industry.

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products
504	Home and Commercial Food Service
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
723	Hazards to Human Health and Safety

Outcome #4

1. Outcome Measures

O: Hand Hygiene Education-People will practice improved hand hygiene for reduction of colds, flu and foodborne illness. I: Hand Hygiene Education-Program participants indicate their intention to adopt recommended health practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	1102

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
People need to learn proper hand hygiene practices in order to reduce the incidence of colds, flu and food borne illness.

What has been done
Extension conducted hand hygiene lessons in 8 different classrooms and other large group settings.

Results
At the end of each lesson, participants were asked which hand hygiene practices they were planning to improve upon. Participants raised their hands for each practice and the number of participants were counted on a chart. The chart was then hung up in the classroom to help remind the participants what they were planning to work on.

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies
503	Quality Maintenance in Storing and Marketing Food Products
504	Home and Commercial Food Service
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
722	Zoonotic Diseases and Parasites Affecting Humans
723	Hazards to Human Health and Safety

Outcome #6

1. Outcome Measures

O: Interested consumers will change food preservation practices after attending University of Idaho Extension food preservation classes taught by University of Idaho Extension. Indicator: Number of people indicating they will change their food preservation practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	151

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
When individuals do not know the risk involved with improper food preservation, they cannot do better. This is why consumers need Extension to provide proper food preservation educational programs, in order to reduce the spread of foodborne illness.

What has been done
Extension taught Preserve@Home workshops focusing on proper food preservation techniques and how recommended processes reduce the risk of foodborne illness from improperly home-canned products and consumption.

Results
As found in live demos and face-to-face conversations, participants intend to change their practices, now properly and safely preserving food for themselves, their families and their friends.

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products
504	Home and Commercial Food Service
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
723	Hazards to Human Health and Safety

Outcome #7

1. Outcome Measures

O: People use Just in Time Food Safety information to help them make critical decisions about the safety of food preparation, storage and preservation practices. Indicator: Number of food safety questions categorized as safety rather than quality related.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	643

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Many consumers don't know were to turn to find safe and reliable answers to food safety questions. UI Extension uses fact-based resources to answer these questions. Many people call or stop by with questions regarding food safety, looking for safe practices.

What has been done
When people asked for advice related to food safety, educators kept a log in order to record these questions and recorded whether or not the consumer planned to contact UI Extension in the future when they had questions.

Results
In one county, there were 29 people who contacted the office regarding food safety. 28 of these people indicated they intended to contact UI Extension in the future when they had questions.

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products
504	Home and Commercial Food Service
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
723	Hazards to Human Health and Safety

Outcome #8

1. Outcome Measures

O: People use Just in Time Food Safety Information to help them make critical decisions about the safety of food preparation, storage, and preservation practices. Indicator: Number of people who describe that they will use UI Extension for other questions.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products
504	Home and Commercial Food Service
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
723	Hazards to Human Health and Safety

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The economy and competing public priorities may have impacted outcomes.
Community, social, religious, school and work endeavors take the time and energy from Bingham county residents to pursue personal learning at an Extension office. The internet continues to be a popular source for learning, despite the misinformation presented at many popular sites. Financial or ethnic concerns to attend an Extension program may be a factor.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

We conducted a study to determine the effectiveness of a 30-min hand-washing instruction among youths in kindergarten through fifth grade. Two months after implementing the instruction, we gathered survey data to assess knowledge gained and student behaviors. Results revealed that high proportions of youths in kindergarten through second grade (n = 90) were able to recognize various situations requiring hand washing and that majorities of youths in third grade through fifth grade (n = 172) tended to wash their hands at relevant times (e.g., after using the bathroom). Overall, we concluded that youths taught a 30-min hand-washing lesson reduced microbial counts on washed hands, maintained knowledge, and made positive behavior changes.

Key Items of Evaluation

I have been in charge of issuing food safety certificate cards to over 2,000 high school students in Idaho through Ready Set Food Safe food safety training curriculum in collaboration with 40 or more high school Family and Consumer Sciences teachers. 273 youth and 192 adults were exposed to the "Glitter Bug" hand washing demonstration at a local harvest festival. Many were amazed at the germs that were revealed on their hands even after "cleansing" hands with hand sanitizer. (Soap and water were not available at this venue). Participants were instructed to wash thoroughly with soap and warm running water, scrubbing vigorously for 20 seconds, including fingernails, between fingers, and backs of hands.

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Climate Change: Forest Management

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
112	Watershed Protection and Management	10%		0%	
122	Management and Control of Forest and Range Fires	15%		0%	
123	Management and Sustainability of Forest Resources	40%		25%	
131	Alternative Uses of Land	10%		0%	
132	Weather and Climate	5%		5%	
213	Weeds Affecting Plants	5%		35%	
215	Biological Control of Pests Affecting Plants	5%		25%	
216	Integrated Pest Management Systems	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	3.6	0.0	2.0	0.0
Actual Paid	3.2	0.0	0.8	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
76214	0	16054	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
76214	0	16054	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
296908	0	309134	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 5,038 direct educational contacts through Extension and 483,371 indirect contacts. Team members published two articles in refereed journals, one Extension publication and participated in projects funded by $113,343.03 in grants.

Forest management programs are largely centered in the forest-rich Idaho Panhandle and north-central regions of Idaho. Since 1993, the extension systems of the University of Idaho and Washington State University have cooperated to hold an annual forum for consulting foresters, state-employed service foresters, and other natural resource professionals working with family forest owners. The program, titled the "Family Foresters Workshop," updates participants on emerging technology and knowledge applicable to family forestry. The location alternates between northern Idaho and eastern Washington. Other programs for forest owners included the Forestry Shortcourse.

As part of the Idaho Forest Stewardship program, a cooperative effort with the Idaho Department of Lands (IDL) and other partners, UI Extension provided workshops, field days, and other educational activities titled "Strengthening Forest Stewardship Skills." This work is supported, in part, by grant funds from the US Forest Service through the IDL. Activities are designed to strengthen forest owners' ability to implement practices that improve forest health and growth.

The Idaho Master Forest Stewards (IMFS) program works with forest owners to develop their skills and provide information and education in schools and at community events. The program is intended to improve growth and health of Idaho forests through education by trained and certified volunteers. Other focuses include site visits with natural resources and land management topics for private landowners with strong emphasis on economic potential of land management and target audience of new/small-acreage landowners. Education including Logger Education to Advance Professionalism (LEAP) which features over 20 hours of training designed to increase loggers' understanding and skills related to forest ecology, silviculture, and water quality.

Other activities include writing/publishing posters, conference proceedings, press articles and other media, communications in journals, workshops and invited presentations.

Team members delivered workshops/classes like Central Idaho Natural Resources camp and Current Topics in Forestry with topics including stream restoration, climate science, mushroom hunting and growing, forest edibles, Android forestry, control of invasive weeds, forest health, scaling/marketing private timber, tree identification and measurement, forest management technology, GIS/GPS training, rural land purchasing, forest planning, and broadleaf weeds.

Team members attended committee/council meetings like Clearwater Basin Coalition (a regional development leadership effort) that works with community leaders, NGOs, and US Forest Service staff to improve management of federal lands in Idaho. This effort stresses team contribution to the local economy while practicing good stewardship and creating improved ecological conditions for the values people desire from the land.

2. Brief description of the target audience

The traditional primary audiences for this topic team are family forest owners, private landowners, loggers, forestry and natural resource professionals and managers, outreach to fire and emergency professionals, landscape architects, designers, contractors, Master Gardeners, green industry professionals, residents of Idaho's wildland/urban interface, Master Forest Stewards, Master Water Stewards, sustainably managed forests and certified wood products loggers, natural resources committees, community leaders, recreation participants, Extension faculty and educators, teachers, and youth.

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
Actual	3940	345348	1098	138023

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	2	3

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of workshops, field days, etc. (reported by program organizer, if organized by UI Extension)

Year	Actual
2018	41

Output #2

Output Measure

- Number of participants in workshops, field days, etc. (reported by program organizer, if organized by UI Extension)

Year	Actual
2018	2848

Output #3

Output Measure

- Number of articles in popular press

Year	Actual
2018	10

Output #4

Output Measure

- Number of hits on U-Idaho Extension Forestry website and YouTube videos; number of likes on U-Idaho Extension Forestry Facebook page; number of webinar attendees

Year	Actual
2018	22

Output #5

Output Measure

- Continuing Education hours for participants (reported by program organizer, if organized by UI Extension)

Year	Actual
2018	3376

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.
2	O: Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased job skills and maintained certification requirements. Indicator: Numbers of participants indicating they will adopt various specific recommended practices
3	O: Forest and Natural Resource Workforce Development: Numbers of programs offered for formal continuing education credits (e.g., Society of American Foresters CFEs, ISDA pesticide credits, Idaho pro-logger credits, etc.). Indicator: Numbers of programs
4	O: Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased job skills and maintained certification requirements. Indicator: Numbers of Idaho loggers gaining or maintaining enrollment in the Idaho Pro-logger program.
5	O: Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased job skills and maintained certification requirements. Indicator: Numbers of foresters gaining or maintaining enrollment in the SAF Certified Forester program
6	O: Forest and Natural Resource-based Economic Development: Forest owners, managers, entrepreneurs, and decision-makers are taking greater advantage of economic opportunities related to forest lands, improving rural economies. Indicator: Numbers of participants that have indicated they will take greater advantage of economic opportunities related to forests.
7	O: Forest Productivity and Sustainability: The productivity and sustainability of Idaho's working forests has improved, and forest owners and managers are more successful at achieving their management goals. Indicator: Numbers of participants indicating they will adopt various specific recommended forest management practices.

Outcome #1

1. Outcome Measures

O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #2

1. Outcome Measures

O: Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased job skills and maintained certification requirements. Indicator: Numbers of participants indicating they will adopt various specific recommended practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	232

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Loggers are a critical link in forest management. Unfortunately, if communication between landowners, loggers, or foresters is inadequate, the resulting timber or biomass harvests may not meet expectations. To the extent forest certification programs require trained loggers, UI Extension logger training efforts are vital to helping Idaho forest product companies maintain or increase Idaho's share of global markets for certified wood products.

What has been done
Logger Education to Advance Professionalism ('LEAP') features over 20 hours of training designed to increase loggers' understanding and skills related to forest ecology, silviculture, and water quality. LEAP Update is an annual program where loggers learn about current forestry issues and meet Idaho Pro-Logger program annual credit requirements. Through these and other programs, UI Extension provided 1,372 continuing education hours for 188 Panhandle loggers in 2017-2018.

Results
One thousand, seventy-six loggers have attended the 44 Idaho Panhandle LEAP sessions offered annually since 1994. As a result of the two Idaho Panhandle LEAP Update sessions held in 2018: 163 will correctly apply Idaho forest practice laws; 129 will factor in worker fatigue into logging safety; 127 will maintain forest soil productivity; 118 will assess forest product markets; 113 will work with Idaho family forest owners more effectively; and 85 will use personal location devices for logging safety. As of 2018, 463 loggers are enrolled in the Idaho Pro-Logger program. Through communication from these loggers, this knowledge will also reach landowners, who will ultimately increase wood and biomass to support Idaho's economy, while maintaining water quality, improving forest health, and enhancing biological diversity.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
122	Management and Control of Forest and Range Fires
123	Management and Sustainability of Forest Resources
216	Integrated Pest Management Systems

Outcome #3

1. Outcome Measures

O: Forest and Natural Resource Workforce Development: Numbers of programs offered for formal continuing education credits (e.g., Society of American Foresters CFEs, ISDA pesticide credits, Idaho pro-logger credits, etc.). Indicator: Numbers of programs

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	11

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Foresters and other natural resource professionals must continually stay current with emerging scientific and technological developments to practice sustainable forestry. UI Extension is uniquely situated to provide local continuing education opportunities for field foresters. K-12 teachers must also stay updated and are continually looking for local opportunities to hone their skills. They also value research-based sources of forestry education to integrate into their classrooms.

What has been done
University of Idaho Extension and Washington State University Extension cooperate to hold an annual forum for consulting foresters, state-employed service foresters, and other natural resource professionals working with family forest owners. Other efforts involve adjusting programs developed for forest owners or other groups to simultaneously meet foresters' or teachers' needs as well (e.g. offering UI credit for the Forestry Shortcourse).

Results
One hundred thirty-six foresters and other natural resource professionals attended eight UI Extension forestry programs in the Idaho Panhandle in 2017-2018, for 942 contact hours. Participants in the 2018 Family Forester's Workshop, indicated percentage knowledge increases ranging from 35% to 122% on: seedlot selection, family forest owners demographics and preferences, managing beavers, inexpensive biochar kilns, biofuels, reducing fire risk on mixed ownerships, family forest owner cooperatives, riparian buffers & stream temperature, and family forest economics/policy.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
122	Management and Control of Forest and Range Fires
123	Management and Sustainability of Forest Resources
216	Integrated Pest Management Systems

Outcome #4

1. Outcome Measures

O: Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased job skills and maintained certification requirements. Indicator: Numbers of Idaho loggers gaining or maintaining enrollment in the Idaho Pro-logger program.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	466

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Loggers are a critical link in forest management. Unfortunately, if communication between landowners, loggers, or foresters is inadequate, the resulting timber or biomass harvests may not meet expectations. To the extent forest certification programs require trained loggers, UI Extension logger training efforts are vital to helping Idaho forest product companies maintain or increase Idaho's share of global markets for certified wood products.

What has been done
Logger Education to Advance Professionalism ('LEAP') features over 20 hours of training designed to increase loggers' understanding and skills related to forest ecology, silviculture, and water quality. LEAP Update is an annual program where loggers learn about current forestry issues and meet Idaho Pro-Logger program annual credit requirements. Through these and other programs, UI Extension provided 1,372 continuing education hours for 188 Panhandle loggers in 2017-2018.

Results
As of 2018, 463 loggers are enrolled in the Idaho Pro-Logger program. Through communication from these loggers, this knowledge will also reach landowners, who will ultimately increase wood and biomass to support Idaho's economy, while maintaining water quality, improving forest health,

and enhancing biological diversity.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
216	Integrated Pest Management Systems

Outcome #5

1. Outcome Measures

O: Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased job skills and maintained certification requirements. Indicator: Numbers of foresters gaining or maintaining enrollment in the SAF Certified Forester program

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	35

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Assisting foresters with maintaining their professional accreditation is important for forestry professionals working in rural Idaho.

What has been done
Two workshops, offering a total of 10 SAF credits were offered.

Results
Two foresters took advantage of this opportunity, earning a total of 10 SAF CFE credits.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources

216 Integrated Pest Management Systems

Outcome #6

1. Outcome Measures

O: Forest and Natural Resource-based Economic Development: Forest owners, managers, entrepreneurs, and decision-makers are taking greater advantage of economic opportunities related to forest lands, improving rural economies. Indicator: Numbers of participants that have indicated they will take greater advantage of economic opportunities related to forests.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	27

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Improving rural economics through better utilization of land-based resources is important to local residents and community leaders.

What has been done
Three natural resource programs were offered that stress economic utilization of rural landowners natural resources

Results
At least 56% of attendees indicated that they would implement or use the information provided that addressed economic factors of forest/land management. An additional 31% indicated that they might do so.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
122	Management and Control of Forest and Range Fires
123	Management and Sustainability of Forest Resources
131	Alternative Uses of Land
216	Integrated Pest Management Systems

Outcome #7

1. Outcome Measures

O: Forest Productivity and Sustainability: The productivity and sustainability of Idaho's working forests has improved, and forest owners and managers are more successful at achieving their management goals. Indicator: Numbers of participants indicating they will adopt various specific recommended forest management practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	653

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Forty-four percent of the Idaho Panhandle forests are held and managed by 23,796 family forest owners. Since 1987, the average annual timber harvest from these forests was valued at over $100 million milled. With a better working knowledge of forest ecology, silviculture, and related forest management techniques, family forest owners can sustainably produce more wood and biomass and simultaneously improve forest health, water quality, wildlife habitat, and other forest values.

What has been done
As part of the Idaho Forest Stewardship program, UI Extension provides an annual series of workshops, field days and other educational activities designed to strengthen forest owners' ability to implement practices that improve forest health and growth (titled Strengthening Forest Stewardship Skills). We also train and manage 'Idaho Master Forest Stewards' - volunteers who get 70 hours of training to provide a variety of outreach efforts and undertake leadership activities.

Results
Four-hundred, ninety-five people indicated they would adopt various recommended forest management practices as a result of participating in UI Extension programs on forestry. Improved management practices family forest owners implement as a result of knowledge and skills gained in UI Extension programs will ultimately increase wood and biomass to fuel Idaho's economy, maintain water quality, reduce catastrophic fire risk, improve forest growth and health, and enhance biological diversity.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

When large disturbances happen I work with county faculty to support their efforts.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Post workshop evaluations were conducted for LEAP programs. There was a 32% knowledge increase in forest ecology and silviculture and a 33% knowledge increase of forest water quality and stream after the workshops. Evaluations of the LEAP Update programs were also conducted. 70% of workshop attendees said they will probably maintain forest soil productivity as a result of attending the program. 90% indicated they will correctly apply the Idaho Forest Practices Act.

Key Items of Evaluation

In 2017-2018, Idaho Master Forest Stewards provided over 470 hours of volunteer service to 3,718 forest owners and others. In addition to interacting with peer forest owners, Idaho Master Forest Stewards volunteered in a wide range of activities, including: hosting and teaching at forest owner field educational programs; writing articles for newspapers and magazines; teaching youth about forests and forestry; and serving in leadership positions in the Idaho Forest Owner Association, Idaho Tree Farm Program, and Conservation Districts. The value of Idaho Master Forests Stewards' 2017-2018 volunteer hours is estimated at $9,917. Thirty-one volunteers are certified and actively volunteering in the IMFS program as of November 2018. Thirty-two Idaho Master Forest Stewards have met the initial 70 hours of volunteer payback since the first volunteers were certified in 2010. Some volunteers have greatly exceeded this. Thus far, 20 volunteers have served at least five years, 14 volunteers have provided over 250 hours of volunteer service, and six volunteers have provided over 500 hours of volunteer service. In 2018 they met twice to discuss ongoing IMFS program development, listen to presentations on climate science and forestry, and tour assisted migration trials that have been established on forest industry lands that are being measured every 5 years.

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Global Food Security and Hunger: Health & Human Nutrition

☑ 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
502	New and Improved Food Products	0%		25%	
701	Nutrient Composition of Food	10%		0%	
703	Nutrition Education and Behavior	30%		25%	
704	Nutrition and Hunger in the Population	15%		0%	
723	Hazards to Human Health and Safety	10%		10%	
724	Healthy Lifestyle	30%		10%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	0%		5%	
903	Communication, Education, and Information Delivery	5%		25%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	6.9	0.0	2.0	0.0
Actual Paid	9.5	0.0	3.4	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
215569	0	112405	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
215569	0	112405	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1395553	0	1382753	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The health and nutrition team logged more than 85,046 direct contacts and 1,406,259 indirect contacts. Team members participated in projects funded by $ 1, 349,305.73 in grants.
Team members presented fitness projects like Healthy Lifestyles/Physical Activity, Choose Health, Strong Women, Walk and Talk, Extreme Adventure Club events, yoga and other fitness events. They covered wellness topics in various workshops such as mindfulness; Living with Intent and Purpose, Improving Sleep, Back to Nature, New Year's Resolutions: Setting Healthy Goals and the Long Live Idaho health campaign. Team members taught several Diabetes Prevention Programs series as well as New Knowledge Adventures that offers health and nutrition classes to older Idahoans. They also presented many nutrition classes such as Nutrition for Healthy Aging, Cheap Eats, and Plant-Based Nutrition, Bread in a Bag and Rethink Your Drink, as well as a variety of cooking programs like Cooking Under Pressure, My Healthy Plate and Powerful Protein for Youth, the Pocatello Demonstration Kitchen, and Wholesome Rx: Fruit and Vegetable program. Team members utilized social media to disperse educational videos on FCS topics such as Cook Once, Eat Twice and Healthy Lunch ideas. They wrote numerous articles and newsletters as well as food safety social media posts.
Team members presented fitness projects like Healthy Lifestyles/Physical Activity, Choose Health, Strong Women, Walk and Talk, Extreme Adventure Club events, yoga and other fitness events. They covered wellness topics in various workshops such as mindfulness
Other activities included: teen conferences, classrooms, youth camps, senior centers, farmers markets, and many others. Eat Smart Idaho includes both of the low-income and underserved audience projects (i.e., EFNEP and SNAP-Ed) delivered through UI Extension. The 4-H Food Smart Families project was also delivered as a major youth component of Eat Smart Idaho.

2. Brief description of the target audience

UI Extension reaches general community members as well as low-income and underserved individuals through programs including Health Living, Eat Smart Idaho, Community Dinners, and Healthy Habits. Participants include youth, adults, elderly, educators, coaches, business management teams, county and government leaders, families, nutrition professionals, caregivers for individuals with disease states that can be helped with good nutrition practices, Hispanic youth and adults, federal food assistance program participants (i.e., SNAP, WIC, etc.), daycare providers, tribal youth and adults, Eat Smart Idaho paraprofessionals, University of Idaho students and faculty, University of Idaho Extension faculty, and Master Food Safety Advisors.

3. How was eXtension used?

One team member developed an online eXtension train-the-trainer class for Cooking Under Pressure, reaching 175 Extension professionals.

V(E). Planned Program (Outputs)

1. Standard output measures

2018	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	36249	1402674	48797	3585

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	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Eat Smart Idaho will conduct classes to adults and youth.

Year	Actual
2018	11644

Output #2

Output Measure

- FCS Extension faculty will conduct physical activity classes to adults and youth.

Year	Actual

2018	489

Output #3

Output Measure

- FCS extension faculty will use social media platforms to provide health and nutrition information. The target will be the number of followers.

Year	Actual
2018	4667

Output #4

Output Measure

- FCS extension faculty will conduct nutrition classes to adults and youth.

Year	Actual
2018	592

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Adult Eat Smart Idaho participants will improve their diets after completing the Eat Smart, Be Active course. Indicator: Number of adults that improve their diets by at least one food group (determined through pre/post food behavior checklist).
2	O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.
3	O: Participants in the Healthy Living project will increase their knowledge about eating healthy. Indicator: Participants will increase their knowledge about fruits, vegetables, whole grains, low-fat dairy, lean protein, healthy fats.
4	O: Participants in physical activity programs will improve overall fitness. Indicator: Number of adults that improve performance in physical fitness assessments.
5	O: Participants in the Healthy Living project will improve their eating habits. Indicator: Number of participants in the Healthy Living project who consume more fruits, vegetables, whole grains, or low-fat dairy products

Outcome #1

1. Outcome Measures

O: Adult Eat Smart Idaho participants will improve their diets after completing the Eat Smart, Be Active course. Indicator: Number of adults that improve their diets by at least one food group (determined through pre/post food behavior checklist).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	1313

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The prevalence of obesity was 39.8% and affected about 93.3 million of US adults in 2015~2016. Obesity-related conditions include heart disease, stroke, type 2 diabetes and certain types of cancer that are some of the leading causes of preventable, premature death. The estimated annual medical cost of obesity in the United States was $147 billion in 2008 US dollars; the medical cost for people who have obesity was $1,429 higher than those of normal weight. Limited access to food has been linked to health conditions such as obesity, and health behaviors such as lower fruit and vegetable intake and lower rates of physical activity. In turn, these health behaviors are associated with increased chronic disease risk and healthcare costs.

What has been done
Eat Smart Idaho provided direct nutrition education and physical activity classes to low-resource adults throughout the state. Participants completed a Food and Physical Activity Questionnaire before and after a series of classes following the Eating Smart and Moving More curriculum.

Results
1114 adults participated in the Eating Smart and Moving more classes. Of these, 721 adults completed the series and associated pre/post Food and Physical Activity Questionnaire. Graduates reported improvement in dietary intake following the class series. 79% (569 out of 721) reported an increase in fruit and/or vegetable intake, 42% (294 out of 701) reported increased intake of whole grains, 40% (287 out of 718) reported increased dairy intake, and 35% (6 out of 17) reported increased intake of beans and peas. Overall, 88% of graduates (638 out of 721) reported improved dietary behaviors related to at least one food group assessed.

4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
It is our responsibility to educate and train the next generation of scientists through advanced degrees.

What has been done
Graduate students worked on research projects associated with this topic team.

Results
Graduate students fulfilled advanced degree requirements through their research and defended and presented their results at professional meetings.

4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food

Outcome #3

1. Outcome Measures

O: Participants in the Healthy Living project will increase their knowledge about eating healthy.
Indicator: Participants will increase their knowledge about fruits, vegetables, whole grains, low-fat dairy, lean protein, healthy fats.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	572

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
About three-fourths of the population have an eating pattern that is low in vegetables and fruits according to the 2015-2020 Dietary Guidelines report. 1 in 10 adults meet the federal fruit or vegetable recommendations, according to a new study published in CDC's Morbidity and Mortality Weekly Report.

What has been done
Extension implemented a Plant-Based Nutrition and Cooking series to help individuals focus on the 3/4 of their plate that should be from plants (fruits, vegetables, whole grains, nuts, beans, etc.).

Results
66.6% of those who didn't know that eating more plant-based could lower their risk of certain chronic diseases increased their knowledge in the benefits of plant-based diets. 36% who did not or were not sure how to use and cook a variety of plant-based foods to make delicious meals increased their knowledge to do so.

4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
723	Hazards to Human Health and Safety
724	Healthy Lifestyle

Outcome #4

1. Outcome Measures

O: Participants in physical activity programs will improve overall fitness. Indicator: Number of adults that improve performance in physical fitness assessments.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	160

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
1. Compromised strength, balance, and flexibility in adults/seniors; decreased independence, increased fall risk, increased health care costs, and decreased quality of life. 2. Sub-optimal muscular strength, coordination, and physical endurance in adults/seniors; compromised activities of daily living.

What has been done
1.Gentle chair yoga classes offered at Extension; one hour/week of seated and standing strength, stretching, and balance work was offered. 2. Fitness Made Simple classes offered at Extension; two hours/week of resistance training, cardiovascular and toning exercises were taught.

Results
1. After 4 months of yoga sessions, six post-surveys were completed (pre-surveys given at start of session). 5/6 reported improvements in one or more areas of strength, balance, and/or flexibility, improving quality of life. 2. After at least 3 months of fitness sessions, 8 participants reported improvements in strength, coordination, and endurance (per survey).

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

O: Participants in the Healthy Living project will improve their eating habits. Indicator: Number of participants in the Healthy Living project who consume more fruits, vegetables, whole grains, or low-fat dairy products

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	121

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
About three-fourths of the population has an eating pattern that is low in vegetables and fruits according to the 2015-2020 Dietary Guidelines report. 1 in 10 adults meet the federal fruit or vegetable recommendations, according to a new study published in CDC's Morbidity and Mortality Weekly Report.

What has been done
A Plant-Based Nutrition and Cooking series was developed and implemented.

Results
92% of those who filled out the survey had made at least one change post-attending the series to become more plant-based. 77% of those who filled out the survey were using the recipes provided in the class, and 69% were making simple plant-based changes to their usual at-home recipes. 65% reported using more fruits and vegetables in their cooking.

4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
724	Healthy Lifestyle

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

As the economy shifts, so does the participation levels in the different programming areas I offer. Looking to help evolve local teaching strategies in physical education, I am working with local teachers and administrators to look at using more technology in their classrooms. Our success will be greatly affected by economy and different competing public priorities.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Plant-Based Nutrition & Cooking Series: For the plant-based nutrition and cooking series, this was a retrospective post-series survey. Individuals who participated in any one of the seven classes were sent an email or mailed written survey to complete. Evaluation results indicated significant behavioral changes. 77% were using the recipes provided in the class, and 92% had made at least one change since participating in the program to become more plant-based.

Key Items of Evaluation

Eat Smart Idaho, with full support from the Coeur d'Alene School District, continued to administer the Smarter Lunchroom Movement Project during the 2017-2018 school year. Cornell University's Smarter Lunchroom Project has proven when children are given healthy choices and understand why they should be eating them they are more apt to consume them, not only at school, but during other meals of the day. Smarter Lunchroom has also shown that these healthy behaviors turn into long-term behaviors, creating adults that eat more fruits, vegetables, whole grain and low-fat dairy. Ultimately, creating long-term healthy eaters is an effective way of lowering obesity rates and healthcare costs in our future. All 10 elementary schools in the Coeur d'Alene School District were evaluated with a pre-and post-Smarter Lunchroom evaluation. With all of the collective works by Eat Smart Idaho within the 2017-2018 school year, we are proud to report that all 10 elementary schools scored a GOLD STATUS, the highest honor under Smarter Lunchroom.

V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

Climate Change: Soil, Water, Waste and Air Management.

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	10%		15%	
102	Soil, Plant, Water, Nutrient Relationships	10%		15%	
111	Conservation and Efficient Use of Water	10%		15%	
132	Weather and Climate	10%		10%	
133	Pollution Prevention and Mitigation	10%		10%	
205	Plant Management Systems	10%		10%	
307	Animal Management Systems	10%		0%	
403	Waste Disposal, Recycling, and Reuse	10%		10%	
405	Drainage and Irrigation Systems and Facilities	10%		15%	
601	Economics of Agricultural Production and Farm Management	10%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	4.6	0.0	9.0	0.0
Actual Paid	4.5	0.0	13.1	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
226037	0	483019	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
226037	0	483019	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
151691	0	5061180	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 18,037 direct educational contacts through Extension and 85,960 indirect contacts. They published 11 articles in refereed journals and 13 Extension publications, and they participated in projects funded by $1,057,625.71 in grants.

The soil, water, waste and air management team is highly integrated, participating in active projects to discover new knowledge, demonstrate and transfer new technologies, and work to understand local variants that impact resource-based enterprises and the environment. Research activities include aquaculture, evaporative loss, soil testing, dairy manure compost, and pest management. These topics are the subjects for field days and tours and have been communicated through professional journals.

Much of this team's educational effort relies on field demonstrations to help growers and other stakeholders understand local conditions related to use of cover crops, water quality monitoring, commercial trout feed, on-farm composting, manure application, recycling, and Low Elevation Spray Application (LESA) irrigation technology, as well as helping operators find the climate/weather data they needed for operations.

Consultations included soil analyses and surveys for disease and pest issues, including industry representatives, watershed advisory groups, individuals, Idaho Department of Environmental Quality, and local government. Team members delivered presentations at workshops, conferences, and events, as well as provided information relevant to industry leaders, stakeholders, and community individuals through newspaper articles, trade publications, bulletins, seminars and newsletters.

Team members continued their work on three pesticide safety education manuals for private applicators including laws and safety, weed management, and insect and disease management, which enhance stewardship principles and knowledge of water quality, resistance management, pollinator protection, drift mitigation, and minimizing environmental impacts. In addition, team members taught pesticide certification and re-certification in 16 classes/workshops.

The IDAH2O program instructed learners about diverse topics such as water systems and soil/water quality. Other activities included an elementary school program about decomposers and vermicomposting, and development of curriculum and homework assistance resources for K-12 teachers and parents in water science. Team members revised the Idaho Home*A*Syst Program and put it on the university website as well as updated Idaho OnePan PAR.

Faculty participated in a range of multistate activities including drought assessments, aquaculture

education (i.e., aquaponics, weed control), participation in the Western Cover Crop Council, and attending and presenting at many conferences, workshops, and field days.

2. Brief description of the target audience

The target audience includes members of the public affected by water and waste management issues, including homeowners, students, realtors, small landowners (including but not limited to: recreational properties, small tracts of forest land, seasonal lake homes, etc.), producers (e.g., animal, aquaculture, crop), processors, dairy producers and workforce, professional applicators, feed manufacturers, irrigation industry personnel, industry representatives; and professional consultants (affected by waste management issues); natural resource professionals and planners, local and/or state officials who develop or implement rules and regulations related to environmental quality; state and federal agency personnel, and affected NGOs. The target audience also includes federal water supply forecasters, scientists, landscapers, science and engineering students, nutrient management planners, K-12 teachers and students, Masters programs (i.e., Master Gardeners, Master Naturalists, etc.), climate and weather data consultants, news reporters, and specialists interested in precision agriculture and sustainable crop production.

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
Actual	12923	83855	5114	2105

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

Patent Applications Submitted

Year:	2018
Actual:	3

Patents listed
Utility Patent Application 16/193,892
Patent Cooperation Treaty Application PCT/US2018/045555
Utility Patent Application 15/863,680

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2018	Extension	Research	Total

Actual	13	11	24

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Workshops, seminars, and presentations to producer groups

Year	Actual
2018	57

Output #2

Output Measure

- Applied and basic laboratory and field research experiments

Year	Actual
2018	21

Output #3

Output Measure

- Newsletters distributed (number of issues) and number of articles submitted for other newsletters

Year	Actual
2018	12

Output #4

Output Measure

- Tours and field days

Year	Actual
2018	15

Output #5

Output Measure

- Professional presentations; invited and volunteer

Year	Actual
2018	31

Output #6

Output Measure

- CCA credits offered for participation in courses

Year	Actual
2018	19

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Participants use best practices for water, pesticide, nutrient, or waste management. Indicator: Number of program participants indicating adoption of recommended practices (follow-up survey data) or indicating intention to adopt recommended practices (post-program questionnaire)
2	O: Producers are aware of issues and knowledgeable of practices that affect the environmental and economic sustainability of agricultural production. Indicator: Number of program participants reporting that their knowledge had been increased because of their participation in programs.
3	O: Adoption of best management practices (BMPs) or UI recommendations by government agencies (EPA, NRCS, ISDA, DEQ, etc.). I: Number of best management practices incorporated into government agency nutrient management, water management, and water quality programs.
4	Development of new innovative technologies to assist the Idaho food processing industry to better deal with wastewater.

Outcome #1

1. Outcome Measures

O: Participants use best practices for water, pesticide, nutrient, or waste management. Indicator: Number of program participants indicating adoption of recommended practices (follow-up survey data) or indicating intention to adopt recommended practices (post-program questionnaire)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	168

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Idaho surface waters are threatened by stormwater pollutants.

What has been done
We taught IDAH2O and Project Workshops across the state.

Results
60 participants in these programs indicated intent to adopt water-wise practices in household and business use. IDAH2O participants monitor local water quality and contribute to statewide and national database. Participants are more knowledgeable with community water resources issues. WET participants provide watershed science education for Pre-K to 12 youth in formal and non-formal settings.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
132	Weather and Climate
133	Pollution Prevention and Mitigation

205	Plant Management Systems
307	Animal Management Systems
403	Waste Disposal, Recycling, and Reuse
405	Drainage and Irrigation Systems and Facilities
601	Economics of Agricultural Production and Farm Management

Outcome #2

1. Outcome Measures

O: Producers are aware of issues and knowledgeable of practices that affect the environmental and economic sustainability of agricultural production. Indicator: Number of program participants reporting that their knowledge had been increased because of their participation in programs.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	325

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
REALTORs are undertrained in basic legal, regulatory, administrative, and scientific principles related to water and real property. A great deal of misinformation exists and persists through professional networking.

What has been done
Extension teamed with five agencies, via work with the Lake Pend Oreille Nearshore WAG, to develop a professional development course, "Land and Water: The Surf and Turf of Sealing the Deal." This course is worth 7 PD credits for REALTORs. Our publication outlines these principles related to water and real estate, and we produced sources of additional information in a "Helpful Resources for REALTORS and Home Buyers: Water Related Agencies and Permit Processes in Bonner and Boundary Counties."

Results
50 Boundary and Bonner County REALTORs and 70 Kootenai County REALTORs improved knowledge about legal, regulatory, administrative, and scientific principles by at least 50% above pre-course tests. REALTORs are better prepared to properly represent property, and intend to pass on their knowledge about water quality issues to their customers, many of whom are from far

away states.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
132	Weather and Climate
133	Pollution Prevention and Mitigation
205	Plant Management Systems
307	Animal Management Systems
403	Waste Disposal, Recycling, and Reuse
405	Drainage and Irrigation Systems and Facilities
601	Economics of Agricultural Production and Farm Management

Outcome #3

1. Outcome Measures

O: Adoption of best management practices (BMPs) or UI recommendations by government agencies (EPA, NRCS, ISDA, DEQ, etc.). I: Number of best management practices incorporated into government agency nutrient management, water management, and water quality programs.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Pesticide safety education was not recognized as part of IPM program.

What has been done
USDA-NIFA IPM Roadmap was revised to include pesticide applicator training and stewardship as part of an IPM program

Results
Pesticide safety education brings recognition, nationally and with federal partners, for pesticide safety education as part of an IPM program. This will help USDA prioritize pesticide education for new funding opportunities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
133	Pollution Prevention and Mitigation
205	Plant Management Systems
307	Animal Management Systems
403	Waste Disposal, Recycling, and Reuse

Outcome #4

1. Outcome Measures

Development of new innovative technologies to assist the Idaho food processing industry to better deal with wastewater.

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)
The sustainability of agricultural production in Idaho for dairy and potato food processors and potential conversion of wastewater streams to biofuel would mitigate environmental concerns for these industries.

What has been done
Research has been conducted on developing a two-step process combining sugar beet pulp with anaerobically digested manure and microalgae, Chlorella. Additionally, a novel liquid-phase plasma discharge reactor was developed.

Results

Biodiesel was produced and met the industrial quality standards.

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Public Policy changes
- Government Regulations
- Populations changes (immigration, new cultural groupings, etc.)
- Other (production manure application plan changes)

Brief Explanation

Dairymen mentioned the low milk prices caused no interests in investigating new equipment. One of my collaborating dairy changes their liquid manure application plan that postponed my on-farm research activities.
Dairy farmers are going thought a downturn period, with low milk prices. Commodities prices remain low too, but a worldwide, and local milk surplus has depressed milk prices to a point where producers' income is below their cost of production. This situation has hold or delayed investments in research and Extension programs that don't have a heavy economic factor on it.
Increasing severity of drought across southern Idaho caused grazing land to dry up prematurely. A ranching group contacted me about this, and I was able to locate data corroborating this increase. As a participant of the Idaho Drought Committee, we were able to provide input to the US Drought Monitor to increase the reported drought severity in this region.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

I did a post-survey of farmers and ag professionals after a cover crop field tour. 90% out of the 20 participants indicated that they gained knowledge on cover crops, MIG, and the LESA system. 60% of the participants indicated that they are interested in "adopting" cover crops on their operation.

Key Items of Evaluation

Completion of the cutthroat trout feed demonstration trial (June 2017-May 2018) which was part of a 4-year WRAC/USDA-NIFA funded project to determine the nutritional requirements of cutthroat trout. Although cutthroat trout are similar to rainbow trout they are not the same and have different nutritional requirements. This may be because they are a different specie and/or not as domesticated as rainbow trout. Feed conversion ratio is an indicator of how efficient a fish converts feed into weight gain. A feed not suitable for

cutthroat trout would likely result in a poor feed conversion ratio, negatively impacting water quality due to increased metabolic waste products and wasted feed. The feed demonstration trial compared an experimental feed formulation specifically developed for cutthroat trout after several laboratory experiments to a commercial rainbow trout feed used on the farm. Cutthroat trout fed the experimental feed performed better than the cutthroat trout fed the commercial trout feed, resulting in faster growth and lower feed conversion ratio (higher feed efficiency). As a result of the project, the experimental feed formulation is available as an open formula (free to all). Two fish feed manufacturers have and are producing feed for cutthroat trout producers using the open formula. There are 3 more aquaculture producers growing cutthroat trout. Cutthroat trout are sold into the recreational stocking market rather than the food market. This is a higher end market. Cutthroat trout are a viable specialty product produced for the recreational stocking market in the western U.S.

V(A). Planned Program (Summary)

Program # 12

1. Name of the Planned Program

Global Food Security and Hunger: Potatoes

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%		15%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		10%	
202	Plant Genetic Resources	10%		10%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	10%		10%	
204	Plant Product Quality and Utility (Preharvest)	10%		10%	
205	Plant Management Systems	20%		15%	
212	Pathogens and Nematodes Affecting Plants	10%		10%	
216	Integrated Pest Management Systems	10%		10%	
503	Quality Maintenance in Storing and Marketing Food Products	10%		10%	
603	Market Economics	10%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	4.4	0.0	11.0	0.0
Actual Paid	6.0	0.0	10.2	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
231890	0	208160	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
231890	0	208160	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
389265	0	4791412	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Members of the potato team reported 9,489 direct contacts and 700,750 indirect contacts. Team members published 13 articles in a refereed journal and one article in an Extension publication, and they participated in projects funded by $462,632.99 in grants.
The potato team is highly integrated, participating in projects to discover new knowledge, to demonstrate and transfer new technologies, and to work to understand local variants that impact potato production and storage. Team members include disease and insect experts; fertility, irrigation, and harvesting experts; and storage and marketing experts. Team members meet regularly and collaborate with industry associations and the Idaho Potato Commission to understand stakeholder needs.
Zebra Chip disease continues to be an important topic for stakeholders and was included in the portfolio of research and extension activities targeting diseases and pests. Research continues on late blight, potato psyllids, potato virus Y, aphids, wireworms, and potato germplasm. Ongoing work includes field and greenhouse experiments to understand the ecology of and treatment options for serious potato pests in the field and in storage, nutrient management questions, and the value of various soil amendments. Field demonstrations help growers and other stakeholders understand the impact of various planting and pest management practices and irrigation needs and strategies. For example, a potato irrigation study was conducted comparing MESA to LESA systems for differences in production.
Technical information was disseminated through county faculty, educational seminars, workshops, conferences, news releases, field and storage visits, phone calls, newsletter articles, updates to websites and hotlines, and by providing information to trade journals and newspapers. With many pests and problems plaguing the potato industry, vital information needs to be shared in a multitude of mediums. The Potato Storage website was frequently used by the industry to access up-to-date information about research and extension programs, including economical, effective, and sustainable production and storage technology for potatoes. These applied activities have been shared through the Idaho Potato Conference, as well as a host of workshops, classes, and numerous field days and tours.
Dozens of workshops and articles in trade publications, presented or written by UI faculty, brought information to the industry about topics such as best practices for storage and residue sampling, pathogens and disease control, and more. Much of UI Extension faculty's work is made possible through collaboration and participation with various citizen and professional alliances concerned with environmental quality and agricultural sustainability.

2. Brief description of the target audience

Target audiences include potato producers and processors, seed producers, field agronomists, consultants, industry and agency representatives, insurance adjusters, field staff, Hispanic workers

involved in potato production, members of the Idaho Potato Commission and the Northwest Potato Research Consortium, USDA-ARS, USDA-APHIS, agricultural chemical company representatives, county weed superintendents, and other extension specialists and researchers (national and international).

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
Actual	9352	700700	137	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	13	14

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Seminars, workshops and field day presentations

Year	Actual
2018	18

Output #2

Output Measure

- Trade Journals

Year	Actual
2018	56

Output #3

Output Measure

- Field Days

Year	Actual
2018	8

Output #4

Output Measure

- Individual Consultations

Year	Actual
2018	112

Output #5

Output Measure

- Graduate Students

Year	Actual
2018	4

Output #6

Output Measure

- Workshops

Year	Actual
2018	6

Output #7

Output Measure

- Email Information Dissemination

Year	Actual
2018	150

Output #8

Output Measure

- Potato Costs and Return Estimates

Year	Actual
2018	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Growers apply best potato management practices. I: Number of growers adopting recommended practices
2	O: Growers are aware of pest incidence. I: Number of Subscribers to pest alert website
3	O: Growers are knowledgeable about best potato management practices. I: Number of growers gaining knowledge about practices who have attended workshops or seminars.
4	O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

Outcome #1

1. Outcome Measures

O: Growers apply best potato management practices. I: Number of growers adopting recommended practices

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	15

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Bruise and the impact it has on potato quality is a concern for the Idaho industry. Variety, physiological characteristics, and environmental conditions will affect susceptibility to an impact during harvest, handling and packing. Of great importance to minimize bruise is the necessity to properly operate harvest and packing equipment.

What has been done
We worked with 10 fresh pack operations and harvest operations. We used an impact recording device to assess where the greatest aspect of their operation causing bruising issues. This helped the operations make adjustments to lower bruise risk. Consult was given to the operations and specific input to make adjustments.

Results
Participants in the project in these 10 operations indicated they would make the suggested adjustments to minimize bruise risk. The grower or fresh shed took action to improve quality.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
201	Plant Genome, Genetics, and Genetic Mechanisms
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)

205	Plant Management Systems
212	Pathogens and Nematodes Affecting Plants
216	Integrated Pest Management Systems
503	Quality Maintenance in Storing and Marketing Food Products
603	Market Economics

Outcome #2

1. Outcome Measures

O: Growers are aware of pest incidence. I: Number of Subscribers to pest alert website

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	175

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Effective insect pest management depends upon timely and accurate identification of target pests

What has been done
Potato psyllids were monitored across the state, and updates on results of monitoring program were disseminated to stakeholders weekly

Results
25 growers and crop consultants who were subscribers to the pest alert website reported that such previous efforts helped them to plan insecticide applications

4. Associated Knowledge Areas

KA Code	Knowledge Area
212	Pathogens and Nematodes Affecting Plants
216	Integrated Pest Management Systems

Outcome #3

1. Outcome Measures

O: Growers are knowledgeable about best potato management practices. I: Number of growers gaining knowledge about practices who have attended workshops or seminars.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	372

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Bruise and the impact it has on potato quality is a concern for the Idaho industry. Variety, physiological characteristics, and environmental conditions will affect susceptibility to an impact during harvest, handling and packing. Of great importance to minimize bruise is the necessity to properly operate harvest and packing equipment.

What has been done
Two 3-minute training videos for quality potatoes and how to operate a windrower and harvester were produced and posted on-line. There were both an English and Spanish translated versions. In addition, newsletters, presentation and articles were also made and disseminated to the industry. Specifically designed equipment stickers about minimizing bruise in both English and Spanish were produced and distributed.

Results
After the posting, approximately 80 people viewed the English windrower operation video, 34 viewed the Spanish language version, 50 people viewed the English harvester operation video, and 12 viewed the Spanish language version. This indicates that many of our Idaho potato producers used these videos as educational resources for both English and Spanish-speaking employees.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
202	Plant Genetic Resources

203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
212	Pathogens and Nematodes Affecting Plants
216	Integrated Pest Management Systems
503	Quality Maintenance in Storing and Marketing Food Products
603	Market Economics

Outcome #4

1. Outcome Measures

O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
We have a responsibility to educate and train the next generation of scientists.

What has been done
Graduate students conducted research projects through this topic team.

Results
The graduate students presented research results at professional meetings and fulfilled advanced degree curriculum requirements.

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)

205	Plant Management Systems
212	Pathogens and Nematodes Affecting Plants

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The drought in the western states is affecting quality of the harvested and stored crop. Price of potatoes affected adoption of some practices due to restriction in operating funds.
Economy affects growers' ability to implement best strategy for weed management in potatoes when they can't afford the most appropriate tank mixtures and cultural tactics.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Post-presentation survey after two webinar presentations at Alberta potato grower meetings. "Role of Weeds in Potato Pest Management." PARTICIPANT COMMENTS: Very Good, Very informative, Well done, Something new to think about when weighing whether to spray or not (cost/benefit), Helped to understand how devastating nightshade & others can be in potatoes. PLANNED CHANGES: 100% of participants said that they will take action- within the next 12 months.

Key Items of Evaluation

Some large-acreage potato growers are using the same herbicide tank-mixture regardless of weed spectrum and resistant weed populations in a given field even though they have an overall agronomist and regional field managers. At least one changed their program to customize tank mixtures. Better weed control resulted which means less competition from weeds for higher potato yields and tuber quality, lower amount of weed seeds being produced and impacting future crops. In addition, a lower number of herbicides/ herbicide rates were used which resulted in a cost savings of at least $1/Acre. On a minimum of 20,000 acres, the savings translates to $20,000 per year.

V(A). Planned Program (Summary)

Program # 13

1. Name of the Planned Program

Global Food Security and Hunger: Small Acreages and Community 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
102	Soil, Plant, Water, Nutrient Relationships	10%		0%	
111	Conservation and Efficient Use of Water	10%		0%	
202	Plant Genetic Resources	10%		30%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		25%	
204	Plant Product Quality and Utility (Preharvest)	0%		25%	
205	Plant Management Systems	20%		20%	
212	Pathogens and Nematodes Affecting Plants	15%		0%	
602	Business Management, Finance, and Taxation	10%		0%	
604	Marketing and Distribution Practices	25%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	2.4	0.0	1.5	0.0
Actual Paid	6.8	0.0	1.9	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
66683	0	39120	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
66683	0	39120	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
506965	0	877749	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The small farms and community systems team members reported 18,132 direct contacts through Extension and 272,432 indirect contacts. Team members published one Extension article and participated in projects funded by $242,888.76 in grants.

Team members delivered a variety of intensive educational programs. Efforts to address the sustainable use of lands and natural resources included delivering "Living on the Land" and "Cultivating Success." Other workshops and workshop series included Food safety/food insecurity issues, marketing, financial fitness for farmers, funding a sustainable farm law, farm networking, ripple effects mapping, enterprise budgeting, backyard poultry, pesticide recertification, composting, and on-farm food safety.

Consultations with individuals or small groups covered topics such as weeds, pests, soil, and pruning. Workshops, presentations, classes and field days included topics such as weed science, land access, Funding for Farmers, pasture irrigation, pesticide recertification, hoop housing, and poultry. Educational events for small-acreage farmers and ranchers were delivered through several conferences including the FSMA Produce Safety Rule and the Women in Agriculture conference and through individual workshops covering topics such as cropping, home gardening, and building networks in rural communities.

The team worked with beginning farmers through farm tours, crop workshops, webinars, meetings, and calls. Team members coordinated a Victory Garden series and Rapid Market Assessment. Team members also collaborated on a "Land and Resource Evaluation" curriculum.

Team members participated in several community food system projects, including Nez Perce Tribe Food Committee, Cascadia Grains EAST Pilot Conference, Idaho Local Food Leaders and the Palouse Clearwater Food Coalition. Members worked with communities to invest in local food systems as a way to help end hunger and food insecurity. One member provided one-on-one services and training on garden beds to elders of the Coeur d'Alene Reservation and community members. Food security issues were addressed through team members' participation in the Produce Safety Alliance Training and the Palouse-Clearwater Food Summit.

Efforts to integrate education about small farms, community food systems, and food and nutrition are an important focus for the small farms team. In collaboration with the community development and health and nutrition teams, UI Extension is building an organized effort to address complex issues common to all of these teams.

2. Brief description of the target audience

The primary target audience includes established and prospective small-acreage farmers, specialty crop producers, processors, ranchers, marketers, and agencies. This includes small-acreage landowners who want to learn how to manage their land in a sustainable manner to protect natural resources. An emerging audience includes consumers who want more information on where to find local food and want to learn more about organic production and eco-labeling, as well as those who are interested in learning more about rural issues. Additional target audiences include local food groups, consumers of local foods, food system participants (e.g., buyers, chefs, cooks, eaters, suppliers, etc.), cooperative members, farmer's market shoppers, Master Gardeners, value-added food producers, schools, local nonprofits, hobby farmers, small flock/backyard poultry producers, small ruminant producers, community leaders, general public members, and Extension educators. Audiences for commercial produce safety include anyone growing fresh fruits, nuts, vegetables, and herbs covered under the Food Safety and Modernization Act Produce Safety Rule.
Underserved Audiences:
The team provides resources for people with small acreages who wish to start, continue, or expand specialty horticultural enterprises. Women, Hispanic, and limited resource farmers are often in this group.

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
Actual	16792	268682	1340	3750

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	0	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Small Farms / Marketing Conferences

Year	Actual
2018	2

Output #2

Output Measure

- Beginning Small Farming & Ranching Course

Year	Actual
2018	12

Output #3

Output Measure

- Small Acreage Business Planning / Entrepreneurship Courses

Year	Actual
2018	2

Output #4

Output Measure

- Land Stewardship courses

Year	Actual
2018	2

Output #5

Output Measure

- Tours, Demonstrations and Field Days

Year	Actual
2018	16

Output #6

Output Measure

- Workshops and Short Courses

Year	Actual
2018	18

Output #7

Output Measure

- Farmers Market Workshops/Trainings with ISDA

Year	Actual
2018	4

Output #8

Output Measure

- Short Topic Webinar

Year	Actual
2018	15

Output #9

Output Measure

- On-farm food-safety trainings

Year	Actual
2018	11

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Producers and landowners increase their knowledge about natural resource management, sustainable farm production, marketing and/or business management principles and practices through University of Idaho Extension programming. Indicator: Number of participants completing workshops, farm tours, short courses or in-depth courses such as Living on the Land, Stewardship of Small Acreages, Sustainable Small Acreage Farming or Agricultural Entrepreneurship.
2	O: Producers and landowners adopt recommended land management and production practices as a direct result of participation in University of Idaho Extension programming. Indicator: Number of documented best management practices adopted by landowners and producers after participating in educational programming or receiving instructional resources.
3	O: Producers and Small Acreage Landowners who have participated in Extension programs serve as motivating community leaders and models for sustainable practices and small farm enterprise success. Indicator: Number of past program participants who volunteer to teach classes or workshops, host tours of their properties, or act as formal and informal mentors to new program participants.
4	O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.
5	O: More privately owned land in Idaho is being managed to reduce negative environmental impacts and conserve natural resources. Indicator: Number of acres managed by participants in Extension small acreage programming.
6	O: Small acreage producers start or maintain a sustainable business enterprises that contribute to local food systems as a result of participating in University of Idaho Extension programming. Indicator: Number of course graduates and program participants actively marketing their farm products at farmers markets, through CSAs or other direct or semi-direct marketing channels.
7	O: Extension faculty work to support, facilitate and mentor community food systems organizations and initiatives across Idaho. Indicator: Number of food systems related groups initiating and collaborating on projects serving their communities.
8	Small scale produce growers and specialty food processors in Idaho reduce their on-farm food safety risks and prepare for the Food Safety and Modernization Act (FSMA) and any rules that potentially impact their operations. Indicator:Number of attendees in courses, workshops, webinars and other outreach events that report an increase in knowledge related to on-farm food safety and the Food Safety and Modernization Act (FSMA), the Produce Safety Rule, the Preventative Controls for Human Food Rule and related regulations.
9	Commercial Produce Growers in Idaho are prepared to comply with the FDA Food Safety and Modernization Act (FSMA) Produce Safety Rule by completing the required education. Indicator: Number of commercial producers completing Produce Safety Alliance Training (currently the only FDA approved training) offered by University of Idaho Extension.

Outcome #1

1. Outcome Measures

O: Producers and landowners increase their knowledge about natural resource management, sustainable farm production, marketing and/or business management principles and practices through University of Idaho Extension programming. Indicator: Number of participants completing workshops, farm tours, short courses or in-depth courses such as Living on the Land, Stewardship of Small Acreages, Sustainable Small Acreage Farming or Agricultural Entrepreneurship.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	722

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Small acreage producers need to know where to find answers and resources for the many areas they need help with, from production and marketing issues to natural resource management.

What has been done
We offer a variety of programs for small acreage producers, from 1-day intro-type classes to longer series with field trips. We address various topics in these classes, from farm financial management to season extension.

Results
Small acreage classes are popular and well attended, with 154 people attending the classes learning farm financial management and other topics.

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
212	Pathogens and Nematodes Affecting Plants
604	Marketing and Distribution Practices

Outcome #2

1. Outcome Measures

O: Producers and landowners adopt recommended land management and production practices as a direct result of participation in University of Idaho Extension programming. Indicator: Number of documented best management practices adopted by landowners and producers after participating in educational programming or receiving instructional resources.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	67

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Our Eastern Idaho area has had a shortage of small farming programming and offerings through Extension. As a result, beginning farmers have had difficulty obtaining University-based curriculum and resources, leading to farmers and ranchers having to obtain information on their own over the internet or books, etc. It is important to offer peer-reviewed best management practices to beginning farmers in order to increase the sustainability of small farming in Idaho.

What has been done
In 2018, UI Extension in Teton County began offering Cultivating Success courses to our regional producers. Classes included the "Is a small farm in your future?" day-long short course and the 6 month "Starting your sustainable small farm" course.

Results
There were 20 participants in our winter classes (with an additional 5 people indirectly reached since they were family of participants). At least 7 known participants have adopted best management practices taught in our class such as devising and implementing their Whole Farm Plans, adopting best management direct marketing practices, and more. These participants have also started new farm enterprises they learned about during the course.

4. Associated Knowledge Areas

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

111	Conservation and Efficient Use of Water
202	Plant Genetic Resources
205	Plant Management Systems
212	Pathogens and Nematodes Affecting Plants

Outcome #3

1. Outcome Measures

O: Producers and Small Acreage Landowners who have participated in Extension programs serve as motivating community leaders and models for sustainable practices and small farm enterprise success. Indicator: Number of past program participants who volunteer to teach classes or workshops, host tours of their properties, or act as formal and informal mentors to new program participants.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	21

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Beginning farmers and ranchers value the camaraderie and mentorship of experienced farmers and ranchers. Peer-to-peer learning helps motivate individuals to learn and try best-practices for sustainable agriculture.

What has been done
Three farmers and ranchers who had previously participated in UI Extension programs or classes co-taught workshops and classes in Teton County, Idaho have volunteered to host students and members of the public at their properties and/or have been guest presenters at some of our classes.

Results
As a result, small farmers and ranchers in my area are developing leadership skills and helping to expand knowledge about best practices in small, sustainable agriculture. Word-by-mouth advertising of Cultivating Success and other related programming is growing among the farming community, and new partnerships with beginning farmers and ranchers are being developed.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
202	Plant Genetic Resources
205	Plant Management Systems
212	Pathogens and Nematodes Affecting Plants

Outcome #4

1. Outcome Measures

O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

O: More privately owned land in Idaho is being managed to reduce negative environmental impacts and conserve natural resources. Indicator: Number of acres managed by participants in Extension small acreage programming.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	4260

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Proper stewardship of natural resources on private land is a major benefit to the quality of life in local communities and to the state of Idaho.

What has been done
Two workshop sessions in small farms were conducted.

Results
Attendees reported a total ownership of 3820 acres.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
202	Plant Genetic Resources
205	Plant Management Systems
212	Pathogens and Nematodes Affecting Plants

Outcome #6

1. Outcome Measures

O: Small acreage producers start or maintain a sustainable business enterprises that contribute to local food systems as a result of participating in University of Idaho Extension programming.
Indicator: Number of course graduates and program participants actively marketing their farm products at farmers markets, through CSAs or other direct or semi-direct marketing channels.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	27

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Farmers need access to customers and other outlets to sell their produce and other farm products.

What has been done
We coordinated a beginning farmers market to train and assist beginning farmers. We also offered Starting Your Sustainable Small Farm course where vendors learned about marketing channels, sales and farmers marketing.

Results
We had ten beginning farmers who have participated in Cultivating Success Idaho begin businesses where they sold at area farmers markets. They learned about how to make it profitable and how much product they need to have to be able to meet customer demands.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation
604	Marketing and Distribution Practices

Outcome #7

1. Outcome Measures

O: Extension faculty work to support, facilitate and mentor community food systems organizations and initiatives across Idaho. Indicator: Number of food systems related groups initiating and collaborating on projects serving their communities.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Regional farmers markets have increasing vendor participation and annual sales. Further, small farms in Teton County are growing (USDA Agriculture Statistics Census). These data indicate that the local foods movement is growing in the Tetons as many consumers are interested in connecting the food they eat to the farmers and land that grow their food. However, leadership and collaboration between stakeholders to enhance the strength and resiliency of food systems projects has been limited.

What has been done
Since December 2016, UI Extension has facilitated monthly Teton Food and Farm Coalition (TFFC) meetings at the Teton County Extension office. This group was formed to coordinate local food system efforts on both sides of Teton Pass (the Teton 'foodshed'). Through networking, leadership development, and partnership building, this coalition of like-minded businesses, farmers/ranchers, nonprofits, and other individuals are working towards the mission of building a strong local food system.

Results
The TFFC has collaborated on a Teton Local Food and Farm Guide, grant proposals, farm-to-table events, and more. While stakeholders are busy and drawn in multiple directions throughout the year, the group continues to set program priorities and brainstorm ways stakeholders can work together to enhance our local food economy, social networks, and environment. In August 2018, the Idaho Farm Bureau reached out to the TFFC and other organizations such as Friends

of the Teton River, the Soil Conservation District, the Henry's Fork Watershed Council, and Full Circle Education to have a public farm and ranch tour in Teton Valley. The efforts of the TFFC helped to spur these collaborative efforts. In addition, the TFFC helped conduct a post farm survey (both printed and online) that was distributed to the 200 participants. Analysis of the evaluation is underway. The TFFC did a Ripple Effects Mapping and strategic planning session in October 2018 to further assess their impacts.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
202	Plant Genetic Resources
205	Plant Management Systems
604	Marketing and Distribution Practices

Outcome #8

1. Outcome Measures

Small scale produce growers and specialty food processors in Idaho reduce their on-farm food safety risks and prepare for the Food Safety and Modernization Act (FSMA) and any rules that potentially impact their operations. Indicator:Number of attendees in courses, workshops, webinars and other outreach events that report an increase in knowledge related to on-farm food safety and the Food Safety and Modernization Act (FSMA), the Produce Safety Rule, the Preventative Controls for Human Food Rule and related regulations.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	390

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
To operate successful businesses and protect consumer health, farmers must understand food safety risks and implement best practices for ensuring food safety from farm to market.

What has been done
We offered two Produce Safety workshops in north Idaho, distributed information on FSMA rules at over 10 producer events (workshops, classes, displays at small farm conferences), worked with Moscow Farmers Market to update the vendor handbook to include resources for FSMA and

produce safety.

Results
We directly observed improved food safety practices on two farms that participated in the FSMA trainings. A regional group of farmers self-organized a farm tour that included discussion of changes made in post-harvest systems to improve food safety.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems

Outcome #9

1. Outcome Measures

Commercial Produce Growers in Idaho are prepared to comply with the FDA Food Safety and Modernization Act (FSMA) Produce Safety Rule by completing the required education. Indicator: Number of commercial producers completing Produce Safety Alliance Training (currently the only FDA approved training) offered by University of Idaho Extension.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	508

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In 2018, the US Food and Drug Administration's Food Safety and Modernization Act Produce Safety Rule went into effect. Growers of agricultural products commonly consumed raw are subject to the rule, depending on the income generated by their farm and the market for their products. One of the requirements for those covered by the rule is completion of a Produce Safety Alliance Grower Workshop.

What has been done
With collaborators, we delivered 8, full-day Produce Safety Alliance Grower Trainings in Idaho Falls, Twin Falls, Caldwell (2 sessions), Payette, Post Falls, Moscow and Boise.

Results
229 Idaho attendees received certificates of completion, a requirement for compliance with the FDA FSMA Produce Safety Rule.

4. Associated Knowledge Areas

KA Code	Knowledge Area
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
604	Marketing and Distribution Practices

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

Increased forest fires and resultant negative impacts on air quality resulted in cancellation of outdoor programs and reduced participation in farm tours. Potential for adverse air quality needs to be considered when planning field workshops or field research between mid-July and early September. Changing regulations related to food safety under FSMA may require updating of educational materials and additional workshops, webinars or outreach materials to convey changes and how they may impact producers.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Community Food System Workshop in Blaine County: In a post-survey of participants, survey results found that: 98% of participants agreed that the workshop "provided new knowledge on our food system". 100% of participants agreed that the workshop "provided new ideas to help improve our food system". 100 % of participants agreed that the workshop enabled them "to meet at least one new person that they would like to work with in the future with respect to the food system". Each participant identified one thing "to take the following actions to promote the food system" work identified in the workshop: supply more food as a farmer, head up food culture committee and provide video plus photo services, provide data on local food activities, shift company culture at Sun Valley Resort

Key Items of Evaluation

With other members of our team, I conducted 3 Rapid Market Assessments for Farmers Markets in Boise, Emmett and Payette, collecting and sharing valuable data about attendance and shopper preferences for these markets. The RMA reports provide valuable findings that markets use to demonstrate their economic and social value to a community

and contributions to downtown revitalization. Markets have also been using the results of their RMAs to make adjustments that strengthen their market, focus advertising and outreach efforts, and add products and services.

V(A). Planned Program (Summary)

Program # 14

1. Name of the Planned Program

Global Food Security and Hunger: Sugar Beets & Minor Crops

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%		0%	
111	Conservation and Efficient Use of Water	5%		0%	
201	Plant Genome, Genetics, and Genetic Mechanisms	5%		5%	
202	Plant Genetic Resources	10%		5%	
204	Plant Product Quality and Utility (Preharvest)	0%		10%	
205	Plant Management Systems	15%		5%	
211	Insects, Mites, and Other Arthropods Affecting Plants	15%		5%	
212	Pathogens and Nematodes Affecting Plants	15%		25%	
213	Weeds Affecting Plants	15%		10%	
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	0%		5%	
216	Integrated Pest Management Systems	10%		10%	
402	Engineering Systems and Equipment	0%		5%	
502	New and Improved Food Products	0%		5%	
511	New and Improved Non-Food Products and Processes	0%		5%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	0%		5%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	0.0	11.0	0.0
Actual Paid	2.2	0.0	10.3	0.0

Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
75310	0	280846	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
75310	0	280846	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
200355	0	4499816	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 4,884 direct contacts through Extension and 599,563 indirect contacts. Team members published two articles in refereed journals and one Extension publication, and they participated in projects funded by $105,345.33 in grants. The sugar beet and minor crops team integrated field research, demonstration, and outreach education primarily related to crop pests, insect biology, diseases, weeds and weed control, rotational studies, and irrigation systems. Team members conducted numerous on-farm consultations for nutrient management and disease and pest control. They conducted field studies and tours in collaboration with growers and in Idaho Agricultural Experiment Station fields to study pesticides, soil moisture sensors, management of insect pests and their natural enemies, the effect of tillage, and sugar beet yield and quality from full and different deficit irrigation. Team members also completed thirteen magnitude-of-residue pesticide trials for the University of Idaho IR-4 Field Research Center. A quinoa study was conducted in Aberdeen and Tetonia with built-in collaboration with industry as well as studies in cover crops, sugar beets and dry beans.

Pest diagnostic services and treatment recommendations were provided for growers. UI Extension faculty conducted and coordinated pest monitoring and pest survey activities. They studied economically important pests and pathogens and devoted significant efforts to weed management and development and extension of knowledge about Integrated Pest Management (IPM) tools. Educators offered pesticide applicator re-certification and pesticide safety training, including pesticide applicator recordkeeping, in both English and Spanish.

Members delivered research investigating foliar diseases of sugar beets and soil-born diseases of beans, sugar beets and onions.

Team members shared new and practical information through Extension workshops, at commodity schools, and through presentations at grower and industry meetings and conferences and workshops.

2. Brief description of the target audience

Our target audience includes growers of minor crops in Idaho and the western United States, commercial operators, agronomists, industry representatives, Idaho State Department of Agriculture and other western departments of agriculture, federal and state agencies, regional land-grant institutions, pesticide registrants, crop advisers, extension educators, scientists, lenders, and farm workers. Other targeted audiences include sugar beet growers, sugar industry consultants, growers of minor crops, and those who

advise growers (e.g., sugar industry representatives and agronomists, chemical companies, seed companies, and consultants).

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
Actual	4680	599563	204	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	1	2	3

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Extension workshops, schools and conferences, planned and organized

Year	Actual
2018	9

Output #2

Output Measure

- Field tours, demonstration projects, planned and organized

Year	Actual
2018	9

Output #3

Output Measure

- Applied and basic laboratory and field research experiments

Year	Actual
2018	26

Output #4

Output Measure

- Professional invited presentations.

Year	Actual
2018	1

Output #5

Output Measure

- Presentations at Extension Workshops, schools and conferences and non-extension venues

Year	Actual
2018	20

Output #6

Output Measure

- Sugarbeet Costs and Returns Estimates

Year	Actual
2018	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Growers use best practices in the production of sugar beets and minor crops. I: Number of Idaho growers indicating adoption of recommended practices (follow-up survey data).
2	O: Growers use best practices in regard to irrigation management and nutrient use efficiency in the production of sugar beet and minor crops. I: Number of Idaho growers indicating adoption of recommended practices (follow-up survey data).
3	O: Producers have increased knowledge of pest management and water / nutrient management practices that affect the environmental and economic sustainability of sugar beet and other minor crop production. I: Number of participants who demonstrate increased knowledge following Extension education programs.

Outcome #1

1. Outcome Measures

O: Growers use best practices in the production of sugar beets and minor crops. I: Number of Idaho growers indicating adoption of recommended practices (follow-up survey data).

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	82

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In order for growers to maintain labels for chemicals, to minimize the risk of resistance, to insure maximum efficacy and to safeguard the environment they need to use chemicals properly and judiciously.

What has been done
Information about pest outbreaks, and research based control information was disseminated through the PNWPestAlert.net website.

Results
Following are some of the impacts measured from a year end survey: 23 percent of survey respondents were able to reduce the number of sprays to their crops, pesticide applications were more effective and timely 35 percent of the time, 44 percent of the subscribers increased the use of field scouting to document pest levels. Since the program began 15 years ago, website subscribers are using 5.72 percent less pesticides on their crops than they were before they used the pest alert network. If this decrease in chemical use were extrapolated to the area impacted by PNWPestAlert.net for just onions, (USA Onions, 2016) potatoes (USDA, 2015) and sugarbeets (USDA, ERS, 2016), on an annual basis it would mean approximately 29,897 fewer gallons of chemicals were put into the environment saving growers about $6,161,626 dollars.

4. Associated Knowledge Areas

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

202	Plant Genetic Resources
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #2

1. Outcome Measures

O: Growers use best practices in regard to irrigation management and nutrient use efficiency in the production of sugar beet and minor crops. I: Number of Idaho growers indicating adoption of recommended practices (follow-up survey data).

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

O: Producers have increased knowledge of pest management and water / nutrient management practices that affect the environmental and economic sustainability of sugar beet and other minor crop production. I: Number of participants who demonstrate increased knowledge following Extension education programs.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	112

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Farmers face many challenges to maintain operating expenses within their own budgets. Understanding the impact of weeds in sugar beet and dry bean is important for implementing weed management practices. Using herbicides for weed control is just one tactic that farmers employ.

What has been done
Field days held in June and August give farmers, extension educators, crop consultants and other agriculture professionals an opportunity to see examples of the most effective weed management strategies. Information from the field studies was presented at the UI Snake River Sugar Beet Conference and UI Bean Field Day

Results
Based on feedback received from those attending our events, those stakeholders who are responsible for making weed management recommendations in sugar beet and dry bean use the information provide to them at the various venues. This results in better weed control results for farmers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
202	Plant Genetic Resources
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
402	Engineering Systems and Equipment

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

Congressional appropriates for the national program remain flat. This reduces number of overall studies that can be done.
Growers' willingness to adopt alternative crops is dependent on their field environments, equipment availability, economic returns, and most importantly, the market.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

There are now 1,607 subscribers. In 2018, there were 83,407 visits to the website and 61,773 emails and 20,119 text messages were sent containing pest management information. In 2018, some of the more prominent alerts posted pertained to potato psyllid, corn earworm, barley yellow dwarf virus, iris yellow spot virus, and regulatory announcements. Following are some of the impacts measured from a year end survey: 23 percent of survey respondents were able to reduce the number of sprays to their crops; pesticide applications were more effective and timely 35 percent of the time, 44 percent of the subscribers increased the use of field scouting to document pest levels.

Key Items of Evaluation

The quinoa acreage in eastern Idaho was 20 in 2014, which has increased rapidly in recent years to approximately 3,500 acres in 2018. When a UI Extension Area Educator was establishing quinoa experiments in early June 2018 in Tetonia, two local growers expressed interest in the experiments and requested information on field management. Another grower in the Tetonia area inquired about quinoa field management and planted a small area. When a presentation about quinoa was given at the Swan Valley field day, Extension colleagues were provided information they could share with other producers in neighboring counties. In October, an advisory committee meeting of alternative crops was held to present program updates on quinoa and cover crops and included a discussion on issues and concerns from growers, industry representatives, Extension educators, and other colleagues. The attendees thought it was a very informative discussion.

V(A). Planned Program (Summary)

Program # 15

1. Name of the Planned Program

Childhood Obesity: 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
724	Healthy Lifestyle	20%		0%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	20%		0%	
806	Youth Development	60%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2018	Extension		Research	
	1862	1890	1862	1890
Plan	19.3	0.0	0.0	0.0
Actual Paid	26.3	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
558240	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
558240	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1911653	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 180,932 direct educational contacts through Extension and 185,752 indirect contacts. Team members published ten articles in refereed journals and twenty Extension publications, and they participated in projects funded by $226,521.71 in grants. Team members were active in all Idaho counties.
Project 1: 4-H Science
Several 4-H projects help youth and adults increase science skills. Animal science programs/projects integrate science processing skills and quality-assurance practices. Program areas include animal evaluation, urban livestock, and livestock skill-a-thons at the local and state levels. Several robotics programs and events are held at the county, district, and state levels. Other science programs include participation in 4-H National Youth Science; rocket experiments and coding & 3-D printing; CSI Science Camp; Tech Wizards programming; food science; space and engineering; drone making, programming, & flying; and natural resource education.
Project 2: Healthy Living
Youth and adults increase knowledge and practice of healthy living skills through a wide variety of camps, presentations to school groups, mini-classes, projects, and other activities held throughout the state. Examples include cooking classes, yoga, Healthy Afterschool Snacks, Healthy Living Teen Advocates, Welcome to the Real World, and the 4-H Food Smart Families program.
Project 3: Youth and Adult Leadership and Volunteer Development
Throughout the state, team members work to recruit, train, and retain youth and adult volunteers at both the state and local level. Volunteers are trained in leadership and citizenship skills. There are many opportunities specifically for teens to be involved and develop their leadership skills, including Ambassador Conference, Know Your Government Conference, Teen Conference, 4-H Camp Teen Leader Training, District Ambassador Retreats, Wellconnected Community Team, retreats designed for teens, and other varied leadership programs for youth.
Project 4: Reaching Underserved Audiences
Team members continue outreach to underserved youth and adults in the University of Idaho 4-H Youth Development programs through afterschool programs, day camps, community events, and targeted programs. Examples include programs for Hispanic and Native American youth, as well as young people in juvenile corrections facilities and rural schools: Albertsons Fifth Day Learning Program, entrepreneurship programming, Build Your Future (a program for first-generation high schoolers), a Village Project targeting Hispanic migrant youth, a juvenile probation summer program, and tribal youth programs of agriculture, science, nutrition, gardening, and life skills. A focus this year has been reaching out to high school students and encouraging them to make plans to attend some form of postsecondary education.

2. Brief description of the target audience

Idaho youth and their families

- Youth in school enrichment and afterschool programs
- Low-income youth and families
- At-risk youth, including youth at juvenile corrections centers and on intensive supervised probation
- Teens at risk for drug or alcohol use
- Refugees
- Children and families with military ties
- Hispanic youth and adult volunteers
- American Indian youth and adult volunteers
- 4-H volunteers and members
- Fair participants and judges
- 4-H supporters and stakeholders
- 4-H livestock buyers

- Beef cattle producers
- FFA members and advisors
- Adult and youth volunteers
- Regional volunteer specialists from other western states
- Teachers and out-of-school instructors
- After-school programs and in-school enrichment
- Summer camp and day camp participants
- Youth development staff
- Fair board members
- Extension educators
- Community leaders and businesses
- Community members

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
Actual	66382	139092	114550	46660

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	20	10	30

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of youth in educational classes, workshops, trainings, seminars taught (individual teaching contacts)

Year	Actual
2018	28863

Output #2

Output Measure

- Number of volunteers in educational classes, workshops, trainings, seminars taught. (individual teaching contacts)

Year	Actual
2018	3612

Output #3

Output Measure

- Number of opportunities to promote 4-H Youth Development (Not the circulation; Enter the number of publications [not Ext. or Research], newsletters, columns, radio PSA's, radio/TV appearances, etc. written or developed.)

Year	Actual
2018	239

Output #4

Output Measure

- Number of actual educational classes, workshops, trainings, seminars taught

Year	Actual
2018	1271

Output #5

Output Measure

- Number of 4-H clubs or groups. Each county enters their county numbers from the ES-237

Year	Actual
2018	921

Output #6

Output Measure

- Number of youth attending state 4-H events (lead contact for event enters data.)

Year	Actual
2018	1405

Output #7

Output Measure

- Number of volunteers attending county, multi-county, district, state, regional, and national events (Lead contact for event enters number attending)

Year	Actual
2018	2742

Output #8

Output Measure

- Number of hits on the web site and social media sites each year (one report per county)

Year	Actual
2018	235618

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percentage of interest and engagement in Science as measured by 4-H Common Measures. Indicator: Youth will express interest and be engaged in Science related activities
2	Number of youth who choose food consistent with the Dietary Guidelines through increased knowledge of healthy beverage choices and/or nutrient rich foods as measured by 4-H Common Measures. Indicator: Number of program participants who are able to identify what a nutrient rich food is and/or healthy beverage is and why they are healthy choices.
3	Increase the number of volunteers by 2% in each county, per year to reflect the needs of 4-H POW project areas. Indicator: Total number of volunteers per county, as accounted for on the annual ES-237 volunteer categories.
4	Increase adult participation in relevant positive youth development, leadership, and content-related training. Indicator: Total number of adults in your county who attended training in positive youth development, content-related training, and leadership related training.
5	Program changes and cultural climate support creating access for underserved audiences to participate in 4-H Youth Development. Indicator: Number of adapted programs making accommodations for a specific unique audience.
6	Percentage of youth who make positive choices as measured by 4-H Common Measures. Indicator: Youth will demonstrate responsibility, critical thinking, and problem solving skills through informed decision making.
7	Percentage of youth who increase positive attitudes and aspiration towards Science as measured by 4-H Common Measures Indicator: Youth will express positive attitudes about Science.
8	Percentage of youth who develop science skills and abilities as measured by 4-H Common Measures. Indicator: Youth will demonstrate a capacity for science process skills.
9	Increase support for underserved populations by developing programs specifically targeted for underserved youth. Indicator: The number of partnerships through Extension and county offices with non-UI funded organizations, businesses, and agencies.
10	Increase youth participation in leadership training. Indicator: Total number of youth in your county who attend leadership training, including positive youth development.
11	Number of youth who improve physical activity choices through increased exposure to physical activity during 4-H events and activities as measured by 4-H Common Measures. Indicator: Number of program participants who participate in at least 30 minutes of physical activity during a 4-H event and/or activity.

Outcome #1

1. Outcome Measures

Percentage of interest and engagement in Science as measured by 4-H Common Measures. Indicator: Youth will express interest and be engaged in Science related activities

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	245

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Reproductive performance in beef cattle needs to be improved, especially in breeding soundness exams, artificial insemination, and the calving process.

What has been done
Field day with 4 stations that kids rotated through to learn about bovine-reproduction related topics.

Results
75 kids and 50 adults gained knowledge of and their appreciation to beef cattle reproduction.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Number of youth who choose food consistent with the Dietary Guidelines through increased knowledge of healthy beverage choices and/or nutrient rich foods as measured by 4-H Common Measures. Indicator: Number of program participants who are able to identify what a nutrient rich food is and/or healthy beverage is and why they are healthy choices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	2173

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Tribal youth are in need of education involving selection of nutrient rich foods and beverages to increase health and decrease obesity rates.

What has been done
125 healthy cooking and lifestyle classes were offered and evaluated from October of 2017 to August of 2018.

Results
1600 youth reported selecting healthier foods and beverages for their daily diets.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
806	Youth Development

Outcome #3

1. Outcome Measures

Increase the number of volunteers by 2% in each county, per year to reflect the needs of 4-H POW project areas. Indicator: Total number of volunteers per county, as accounted for on the annual ES-237 volunteer categories.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	2325

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
An effective 4--H program is reliant on the involvement of trained volunteers. Indeed, we have no program without them. We also need to expand volunteer staff in newer program areas to enable broader involvement and new programming to help 4--H remain relevant, useful, and effective in their counties.

What has been done
We recruited and trained new volunteers to participate in educational robotics programs and new programming at the Eureka! Palouse Tinkering & Tutoring Center. Counties recruited new leaders through Facebook, newsletters, local newspaper, and other similar communications and encouraged parents to step up in bigger clubs.

Results
We increased the number of volunteers conducting 4-H Science programs and had an 8% growth throughout the whole 4-H program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #4

1. Outcome Measures

Increase adult participation in relevant positive youth development, leadership, and content-related training. Indicator: Total number of adults in your county who attended training in positive youth development, content-related training, and leadership related training.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	670

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Adult volunteers need training in these areas in order to become more effective 4-H volunteers. For example, Level 1 certifications are required for all volunteer leaders for each discipline they wish to teach within 4-H Shooting Sports. Without these training, youth would be precluded from participating in these dynamic programs.

What has been done
We had a 4-H volunteer/leader training that was open to all volunteers in our county. The training was focused on content-related training and youth development, like the 5 Level-1 trainings we conducted throughout Idaho, providing geographic availability for interested 4-H volunteers to gain certification in one or more discipline areas.

Results
153 4-H volunteers certified in 2018 for 4-H Shooting Sports in one Idaho region.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
806	Youth Development

Outcome #5

1. Outcome Measures

Program changes and cultural climate support creating access for underserved audiences to participate in 4-H Youth Development. Indicator: Number of adapted programs making accommodations for a specific unique audience.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	155

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Programs needed to increase non-traditional culturally diverse youth audiences in positive youth development opportunities.

What has been done
The Build Your Future program funded 65 non-traditional 4-H teens to attend UI State Teen Association Convention in June where they toured campus, learned more about career opportunities and visited with faculty and students in colleges of specific interest.

Results
Post evaluation data for Build Your Future program indicate that 89% of participating teens are aware of the steps needed to pursue a specific career pathway and learned a new strategy to manage or budget personal finances; 86% can research and calculate potential increase in salary and benefits resulting from additional education or training and can identify options available for funding postsecondary education; and 87% can identify potential careers in their field of interest.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #6

1. Outcome Measures

Percentage of youth who make positive choices as measured by 4-H Common Measures. Indicator: Youth will demonstrate responsibility, critical thinking, and problem solving skills through informed decision making.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	223

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Youth are emerging leaders and can make a difference while in their youth to take advantage of training now.

What has been done
Alpine Camp Teen camp counselors attended Bingham County leadership training. We surveyed them at the end of camp to assess impacts.

Results
Nineteen of 20 youth expressed plans to use critical thinking skills to problem solve before asking adults to intervene and demonstrated knowledge to handle camper behavior problems fairly, quickly, and consistently.

4. Associated Knowledge Areas

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

Outcome #7

1. Outcome Measures

Percentage of youth who increase positive attitudes and aspiration towards Science as measured by 4-H Common Measures Indicator: Youth will express positive attitudes about Science.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	146

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Program managers, funders, and administrators want to know if the 4--H science programs impact youth attitudes towards sciences.

What has been done
Educators and volunteers in 3 counties increased training in the implementation of the 4--H Common Measures, which measure youth attitudes and aspirations towards science.

Results
50 youth participating in 4-H science programs reported increased attitude toward science as a result of their participation in 4-H science programs, indicating interest was positively impacted. Youth aspirations toward science careers resulting from their experiences in 4-H Science programs were slightly positive.

4. Associated Knowledge Areas

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

Outcome #8

1. Outcome Measures

Percentage of youth who develop science skills and abilities as measured by 4-H Common Measures. Indicator: Youth will demonstrate a capacity for science process skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	203

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Coeur d'Alene Tribe has a strong desire to engage youth in agriculture as agriculture is a strong component of their heritage and culture. The tribe also derives income from agricultural-based enterprises on the Fort Hall Reservation. The tribe would like to see more youth involved in agricultural endeavors and opportunities available on the Fort Hall Reservation.

What has been done
Educators developed 4 youth-in-agriculture and 4 record-keeping classes. They taught science-based classes regarding banana, peach, buffalo and turkey production.

Results
80 students learned how to grow and/or raise different agricultural products. They learned about specific processes that were used to obtain and produce wholesome food and products. They now have an increased awareness of the science and practices necessary to obtain safe, wholesome food.

4. Associated Knowledge Areas

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

Outcome #9

1. Outcome Measures

Increase support for underserved populations by developing programs specifically targeted for underserved youth. Indicator: The number of partnerships through Extension and county offices with non-UI funded organizations, businesses, and agencies.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	29

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Stakeholders in Twin Falls County indicated the need for quality experiential education opportunities. Partnerships extend the influence of resources in order to research underserved populations.

What has been done
We directed and oversaw interns who are funded not only by University of Idaho, but also Boys &Girls Club (B&G Club) (beginning its third year-$8500), Hansen 21st CCLC (beginning its second year-$9000), and the Twin Falls County budget (beginning its second year-$18000).

Results
Partnership with B&G Club provides summer STEM and healthy living camps, currently servicing approximately 450 youth ages 7-14. In 2018, two UI Extension interns, two Twin Falls County interns and one B&G Club intern provided 19 programs during the summer, over half of which were STEM related. Specific programs included robotics and coding, cultural awareness, art and crafts, fishing, horticulture, and healthy living.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
806	Youth Development

Outcome #10

1. Outcome Measures

Increase youth participation in leadership training. Indicator: Total number of youth in your county who attend leadership training, including positive youth development.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	319

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Youth need to learn and practice leadership skills to become effective and successful as they enter adulthood.

What has been done
We trained Fort Hall teens to serve as 4-H camp counselors, where they developed and facilitated youth activities as well as served as leaders and mentors.

Results
Fourteen teens now have better social skills that will enable them to lead more successful lives as young adults. These fourteen teens successfully lead camp and did a fantastic job in their new leadership role.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #11

1. Outcome Measures

Number of youth who improve physical activity choices through increased exposure to physical activity during 4-H events and activities as measured by 4-H Common Measures. Indicator: Number of program participants who participate in at least 30 minutes of physical activity during a 4-H event and/or activity.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2018	340

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Childhood obesity and lack of physical exercise is on the rise in the U.S. Therefore, it is important for youth to have opportunities to participate in physical activities in order to help lower their risk of obesity and other health-related problems.

What has been done
Teton County 4-H offered over 60 hours of physical education programming through our shooting sports, livestock, horse, Cloverbud, gardening/beekeeping, yoga, and hiking clubs. We integrated fitness within the clubs to that the activity was viewed as "fun" and not as exercise, per se.

Results
75 youth received 2-4 hours of physical activity each week through our 4-H offerings. Since physical activities were integrated, hands-on and fun, this gave participants opportunities to engage in physical fitness even though it wasn't perceived as "difficult" exercise. This way of integrating fitness into the clubs helps to reach youth who otherwise may not participate in formalized sports or other physical exercise.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (lack of off-season programs; summer sports and Scouts; loss of educator and office staff)

Brief Explanation

Competing programs for youth. Many other programs are providing more activities for youth. Many of the programs are adopting STEM programming. This creates competition for participation. While competition is good in many ways, it affects the numbers of youth participating in our programs. Another factor is access to more qualified (or willing) volunteers. There are STEM activities available for older youth, but finding volunteer staffing to support and conduct these activities for older youth is challenging. Our participation numbers begin to drop off after grade 4. Providing programs of interest and of adequate challenge for older youth is limited by lack of support from volunteers willing to run the programs for these youth.
Youth have many other programs to chose from besides 4-H.
As Jerome's Hispanic populations increases, there is a different cultural climate and Hispanic youth do not come from the traditional rural American 4-H/FFA background through their parents and thus reaching those youth is a challenge. Culture, language, tradition, and trust are all obstacles that must be overcome.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

The youth entrepreneurship program was evaluated through a post-survey to evaluate entrepreneurship knowledge and perceived self-efficacy. Post-survey results indicated 94% of youth learned new information on the skills needed to become an entrepreneur. Roughly 95 percent of students reported they learned new ideas regarding business challenges. About 90 percent learned new information on how to set a goal. When asked if they could become an entrepreneur someday, 93 percent felt confident they could. Students listed the following responses when asked what they liked most about the program:
• The thought of being an entrepreneur and what it would feel like.
• The opportunity to create our own business.
• How the workshops were so hands on.
• Working with new people and the teamwork involved in being arranged into groups.
• You can now be inspired to do it in the future.
• It was fun and creative.

Key Items of Evaluation

An impact story is our new partnership with Idaho Fish and Game. Our 4-H Program Coordinator and three certified 4-H shooting sports volunteers worked with Idaho Fish and Game to offer two Hunters Education/STEPs (Short Term Enrollment Programs) this year. The three 4-H volunteers have been certified in shooting sports for a few years and early in 2018 because Hunters Education certified. Thanks to them, twenty-two shotgun and eighteen archery STEP 4-H members not only completed 4-H projects, but received their Hunters Education certificates. Beyond that, the three volunteers offered five other non-4-H Hunters Education classes through Idaho Fish and Game to 25-30 youth and adults in each class. This partnership offers more opportunities for both organizations and more people in Canyon County get to benefit from the training from Idaho Fish and Game as well as Idaho 4-H Positive Youth Development.

VI. National Outcomes and Indicators

1. NIFA Selected Outcomes and Indicators

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