2015 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 96.7 Extension faculty FTEs in outreach education programs and 68.6 research faculty FTEs. The Extension FTEs are contributed by 71 county-based Extension Educators organized into three extension districts and 48 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 $7.7 million in external grant support and have recorded 338,261 direct teaching contacts. Extension faculty produced 41 peer-reviewed Extension publications, 36 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 and located at the main campus and off campus Research and Extension centers throughout the state. To summarize research faculty in FY2015, they contributed to 13 program teams (Topic Teams) and outputs included 90 journal publications, 5 plant variety patents applications filed, 2 plant variety patents issued, and over $31 million in research project expenditures.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	100.0	0.0	65.0	0.0
Actual	96.7	0.0	68.6	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 continue to use traditional and novel methods to involve stakeholders as advisers. Several of our counties have complete mailing lists for all households in the county. In some cases, distributing mail surveys to every address in a county has been used during the past several years. Recently, one such survey was a multistate effort seeking input from small farm producers in Idaho and Washington. To encourage participation in focus groups, few local budgets can support cash incentives, but nearly all such

activities provide food and refreshment for participants; some are able to advertise that a meal will be served to those who participate. To gather stakeholder input from our growing Spanish-speaking population, announcements are printed and broadcast in Spanish through appropriate venues. In some cases (nutrition education, for example), Latino community leaders were invited to sessions specifically to help the University understand better how to assess the needs of their communities, including socioeconomic categories of residents less likely to have participated in past sessions. In most cases, people are enticed to provide input as they are taking advantage of opportunities to learn something that meets their personal needs.

The major stakeholder groups providing input regarding the Idaho Agricultural Experiment Station's (IAES) spectrum of research activities include the following:

• The Dean's Advisory Board was instituted in 2002. This committee is comprised of a spectrum of stakeholder representatives representing government, industry, and education in Idaho. Academic departments of CALS also have individual advisory boards (see below). The group meets twice each year.

• Idaho's 17 agricultural commodity commissions and organizations provide advice specific to commodity-based programs and appropriate disciplines and departments within CALS. In addition, IAES researchers provide leadership and most of the content for several major commodity schools that are presented annually in the state. The commodity schools are well attended by stakeholders from Idaho and the region. These "schools," while primarily conducted as major outreach/technology transfer to provide the latest research results to stakeholders, also serve as major sources of stakeholder input to IAES regarding research priorities and directions. Commodity schools are annually conducted for potato, cereal, and sugar beet industries. As an example, the UI Potato School is a three-day event that annually attracts approximately 1,400 registrants who come from Idaho, the Pacific Northwest (PNW) region, and virtually all other states involved in potato production, as well as representatives from approximately 25-30 foreign countries.

• Beyond the commodity schools mentioned above, IAES faculty organize and participate in "field days" at each of the IAES's six off-campus Research and Extension centers. They also conduct a number of more focused tours or workshops such as: weed identification, ecology, management and technology at several locations, potato storage research open-house, pomology program open-house and field day, and tours of the IAES's crop genetic improvement research programs for beans, potatoes, wheat, and the oilseed crops of rapeseed and mustard. Again, these stakeholder events function as educational/technology transfer events as well as opportunities for stakeholder interaction.

• The IAES research project portfolio and an abbreviated version of the POW is annually shared and discussed with representatives from the executive branch of state government including the Governor's Office, the Department of Agriculture, and to a lesser extent, the Department of Environmental Quality, Department of Health and Welfare, and the Department of Commerce, as well as key committees (agriculture and appropriations) and leadership of the Idaho Legislature.

• The faculty, staff, and students (both graduate and undergraduate) of CALS have a vested interest in the development of appropriate research programs of high quality that are responsive to the needs of the state and region. This university stakeholder group is an important source of valuable input to the IAES and plays a major role in IAES program development and delivery. In the course of performing their research, the majority of researchers in the IAES have frequent and substantive contact with stakeholders in their research programs as has been indicated above. An array of inputs regarding program directions and priorities are more informally received in this manner and are subsequently considered and often implemented.

• CALS has also mandated the formation of advisory committees for each of the eight academic departments in CALS. As of 2002, all departments of CALS had established advisory committees. These committees are comprised of representatives from a broad base of stakeholders sharing interest in the disciplines, programs, and strategic plans of the departments. These committees are now serving as a significant additional source of stakeholder input for the IAES and CALS. In addition, once a year in meetings the departmental advisory committees meet on campus with the CALS and IAES leadership as well as with the Dean's Advisory Board on program priorities and directions for the college, the experiment station and the departments. One representative from each department's advisory committee serves on

the Dean's Advisory Board.
• University of Idaho Extension has citizen advisory groups in 42 of Idaho's 44 counties and active 4-H promotion and expansion committees in most counties. These committees, which are composed of a very diverse and broad mix of public interests, provide input regarding extension and research program priorities from the county perspective. In some counties, "Friends of Extension" gatherings are scheduled and widely advertised to attract residents to stakeholder input meetings. Extension Specialists have advisory groups as well, many of which are formally associated with producer organizations or commodity interests. A Statewide 4-H Advisory Board and a Statewide Extension Advisory Board contribute annual input to guide Extension programs.

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

Brief explanation.

During 2015, CALS representatives met at least once with each of Idaho's commodity commission groups. In general, these meetings were conducted to determine priorities for research and extension programs relevant to the commissions. CALS administration met two times with the Deans Advisory Board and once with faculty as a group in each of Idaho's four administrative regions. At each of these meetings, representatives are asked to help identify those who should be asked to serve on future advisory boards.
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.
Counties follow specific marketing plans that are developed locally, based upon the demographics and characteristics of their communities and populations. Those plans specify efforts needed to ensure parity in program audiences. Depending on faculty areas of expertise and program efforts, stakeholders may be quite easy to identify (for example, potato growers or dairy owners) or may be more difficult to locate (for example, expectant parents or families in financial difficulty). For farmers and ranchers, Extension cooperates 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 forest taxpayer lists to help identify private forestland owners. For low income audiences, Extension works with schools, with the Department of Health and Welfare, the local faith community, 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 report that they use commodity organizations and other groups in a similar fashion. New faculty members are particularly reliant on veteran faculty to help 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
- Needs Assessments
- Use Surveys
- Other (Commodity-based research and Extension interactions)

Brief explanation.

To generate participation from the public for input to Extension, outreach and advertising was designed to effectively reach all residents of the partner communities. Most faculty members participate on other local advisory boards, commodity association advisory boards, or other venues (for example, the Idaho Potato Commission, soil and water conservation district and weed management district boards, grower's cooperatives, Idaho Aquaculture Association board of directors, etc.) where faculty are part of another organization's efforts to learn and establish program priorities. Where no such organization exists, faculty help launch new organizations, such as the Biocontrol Task Force launched last year in Idaho. Many faculty are invited to present to a diversity of organizations such as chambers of commerce, industry stakeholders, and Rotary, where participants are asked for or volunteer input about University research and extension programs. For many programs, stakeholder input is gathered from key informants. For other programs, input is collected from individuals by conducting surveys using mail, in public spaces or using online survey methods to collect information from traditional and nontraditional stakeholders alike. Gathering input for several programs involved a major effort to reach underserved 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 underserved groups.
For hard-to-reach audiences, faculty members meet with representatives or advocates for the target audiences. Examples of these advocate representatives include the juvenile justice community, local Head Start personnel and the association of Idaho Head Start programs. For other targeted audiences, people starting businesses for example, faculty members conduct surveys for business development service providers and interact with agricultural specialists working for the power industry. Local Extension offices regularly develop surveys for input from the community. Information about how to participate in the surveys is often mailed out in newsletters, announced in newspapers, posted on our webpages and in Facebook. Comments left on Facebook and links on blogs and web pages are increasingly valuable to help understand the needs and interests of our clientele. Most faculty members also ask program participants to recommend future programs. Some faculty reported using newsletters to request input from readers.
During 2015, CALS representatives met at least once with each of Idaho's commodity commission groups. In general, these meetings were conducted to determine priorities for research and extension programs relevant to the commissions. CALS administration met two times with the Deans 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
- 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 individuals
- Other (various)

Brief explanation.

Several shifts in emphasis during the past several years have been the direct result of stakeholder input, including a major increase in investments for family financial education, health and fitness, and fighting obesity. These program expansions have been reported during the past several years and continue in 2015. Also in 2015, CALS is continuing efforts to respond to Federal and State agency stakeholders by shifting resources into childhood obesity, hunger, and other priority programs. We have accelerated our efforts to build a program that integrates health and nutrition, small farms and horticulture to address local food systems challenges. Significant progress in 2015 includes the creation of two area food systems educators to help coordinate work in the healthy communities topic area.

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, during the past several years, University of Idaho has greatly increased research and outreach activities related to annual forages because of stakeholder input. In 2015, 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 to respond to stakeholder needs.

Information acquired state-wide from meeting with various stakeholders is discussed at various CALS leadership meetings. These include monthly CALS leadership meetings which 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 regularly develop surveys for input from the community. Information about how to participate in the surveys is often mailed out in newsletters, announced in newspapers, posted on our webpages and in Facebook. 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
- In the Staff Hiring Process
- In the Action Plans
- To Set Priorities

Brief explanation.

We are witnessing a greatly 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 has created two new positions for local food systems education and CALS is working to create a program of excellence to integrate teaching, research and extension faculty around 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
2846963	0	2742323	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	2836390	0	2742323	0
Actual Matching	2836390	0	2742323	0
Actual All Other	5961026	0	26310204	0
Total Actual Expended	11633806	0	31794850	0

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

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Sustainable Energy: Land and Livestock
2	Global Food Security and Hunger: Cereals
3	Commercial and Consumer Horticulture
4	Community Development
5	Global Food Security and Hunger: Dairy
6	Family Finance
7	Farm and Ranch Management
8	Food Safety
9	Climate Change: Forest Management
10	Global Food Security and Hunger: Health & Human Nutrition
11	Climate Change: Soil, Water, Waste and Air Management.
12	Global Food Security and Hunger: Potatoes
13	Global Food Security and Hunger: Small Acreages and Emerging Specialty Crops
14	Global Food Security and Hunger: Sugar Beets & Minor Crops
15	Childhood Obesity: 4-H Youth Development

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%	
121	Management of Range Resources	10%		10%	
122	Management and Control of Forest and Range Fires	5%		0%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	5%		10%	
205	Plant Management Systems	12%		10%	
213	Weeds Affecting Plants	5%		10%	
215	Biological Control of Pests Affecting Plants	0%		5%	
216	Integrated Pest Management Systems	5%		0%	
301	Reproductive Performance of Animals	5%		10%	
302	Nutrient Utilization in Animals	10%		10%	
305	Animal Physiological Processes	5%		10%	
306	Environmental Stress in Animals	5%		0%	
307	Animal Management Systems	12%		10%	
308	Improved Animal Products (Before Harvest)	5%		4%	
601	Economics of Agricultural Production and Farm Management	0%		5%	
605	Natural Resource and Environmental Economics	5%		3%	
901	Program and Project Design, and Statistics	1%		3%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890

Plan	8.7	0.0	5.0	0.0
Actual Paid	14.8	0.0	4.0	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**
426472	0	374047	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
426472	0	374047	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
888803	0	2530629	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 18,455 direct educational contacts through Extension and 122,394 indirect contacts. Team members published four articles in refereed journals, seven peer reviewed multi-state Extension publications (PNW), and participated in projects funded by $218,019 in grants.
Planned activities include 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 is presented in scientific journals and at professional meetings.

- Alfalfa variety trials
- Irrigation management trials and demonstrations
- Cover crop seeding and grazing studies
- Idaho Hay and Forage Conference
- Local forage and pasture schools and workshops
- Educating lawmakers and the public
- Popular press and journal articles
- Forages website
- Extension publications

Efficient production management and marketing of livestock activities include:

- Beef Quality Assurance workshops, including some to train-the-trainer
- Pasture management workshops
- Local Winter Beef Schools and Cowboy School
- Idaho Cattle Feeders Symposium
- Educational programs targeting young cattle producers
- Applied reproductive strategies in beef cattle, including heifer estrous synchronization projects
- Workshops and projects related to Trichomoniasis and Brucellosis
- Individual consultations on marketing, management, ration balancing, and grazing systems and management

- Popular press and journal articles
- Extension publications

Rangeland resource management and utilization activities include:

- Idaho Range Livestock Symposium
- Idaho Weed Conference and the Nevada Weed Management Association Conference
- Collaboration with the University of Idaho Rangeland Center
- Sage grouse habitat improvement tour
- Technology transfer workshops for tribal land managers in Idaho, Montana and Nevada
- Workshops related to range monitoring, ventenata biology and management, invasive plant mapping
- Weed education and management plans
- Two new plant species were added to the noxious weed rules for the state of Idaho and so a new edition of Idaho's Noxious Weeds has been completed and is ready for printing
- Pesticide specialist and recertification training, and pesticide safety training
- Popular press and journal articles
- Extension Publications

Activities in response to 2015 wildfires included post-fire meetings, burn area noxious weed infestations surveys, and range management projects to address post-fire issues pertaining to livestock grazing.

2. Brief description of the target audience

The target audience is quite varied and includes beef cattle producers and ranchers, tribal and non-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, pesticide applicators, land owners, homeowners, small acreage land managers, federal and state land management agencies, tribal land management agencies, county commissioners, decision makers, conservation groups, consultants, nonprofit organizations, youth, other university staff and faculty, departments/individuals who have a need for educational programming, and projects in livestock and natural resource management.

3. How was eXtension used?

Use of eXtension is determined as individual faculty identify useful resources for their programs.

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	15973	120062	2482	2332

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

Patent Applications Submitted

Year:	2015
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	7	4	11

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Producer schools. (number of schools: multiple sessions of instruction on multiple subjects)

Year	Actual
2015	15

Output #2

Output Measure

- Workshops (including BQA).

Year	Actual
2015	95

Output #3

Output Measure

- Demonstrations and applied research projects.

Year	Actual
2015	22

Output #4

Output Measure

- Popular press articles.

Year	Actual
2015	67

Output #5

Output Measure

- Newsletters; number of issues.

Year	Actual
2015	48

Output #6

Output Measure

- Field days

Year	Actual
2015	21

Output #7

Output Measure

- Presentations at producer meetings

Year	Actual
2015	248

Output #8

Output Measure

- Budgets developed to improve clientele decision making

Year	Actual
2015	18

Output #9

Output Measure

- Curricula developed

Year	Actual
2015	3

Output #10

Output Measure

- Surveys conducted

Year	Actual
2015	2

Output #11

Output Measure

- Tours conducted

Year	Actual
2015	11

Output #12

Output Measure

- Websites created or significantly enhanced (number of sites)
  Not reporting on this Output for this Annual Report

Output #13

Output Measure

- Blogs created and maintained
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Learners will adopt new, accepted, or recommended production practices. I: Number of participants indicating in post-program surveys that they have or intend to adopt recommended practices.
2	O: Learners aquire knowledge and understanding of new, approved, or recommended practices. I: Number of participants citing change in knowledge on evaluation instruments(pre- post-test results) [number of evaluations administered and examined.
3	O: Learners are aware of new, accepted, or recommended production practices and emerging technologies and issues (BQA, NAIS, etc.) I: Number of participants at educational events.
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: Producers possess skills and knowledge about beef quality assurance (BQA). I: Number of Idaho Beef Quality Assurance (BQA) Program certificates awarded.

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	173

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Cattle producers were in need of educational information on dryland alfalfa varieties, cover crop grazing and beef cattle nutrition. Also, forestland grazing is common with many land owners being new to grazing on forest lands or new to land ownership.

What has been done
An alfalfa variety trial was conducted on two ranches in north Central Idaho and cover crop grazing was demonstration on two ranches as well. In addition, a forestland grazing workshop discussing the topics and up-to-date research was presented to participants.

Results
Farmers and ranchers have adopted and planted new alfalfa varieties due to the results of the variety trials. Farmers from three states have inquired about the results and have made planting decisions based on the results. Five producers have adopted the cover crop grazing method due to the results from the trials. One producer developed a new enterprise, selling the forage standing to a yearling cattle operator on a cost per pound of gain basis. Of the forestland grazing workshop participants, 81% indicated they would implement or improve practices that will improve forest health and growth when grazing forests and 80% indicated they would implement or improve practices that would improve livestock health and growth when grazing forests.

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

O: Learners aquire knowledge and understanding of new, approved, or recommended practices. I: Number of participants citing change in knowledge on evaluation instruments(pre- post-test results) [number of evaluations administered and examined.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	411

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Pastures often produce below their potential because of poor management. Proper grazing management can improve productivity and reduce input costs. Also, producers need to understand magnitude of yield and quality losses in hay during storage. Knowing this will inform producers for marketing decisions.

What has been done
The Lost Rivers Grazing Academy was held in September in Idaho. The Living on the Land class was held at 3 locations in SW Idaho where grazing management was taught. A retrospective

survey was conducted after a presentation on hay storage efficiency. Producers were asked to indicate the change of knowledge from prior to after the presentation.

Results
The participants improved their scores on pre/post testing. More importantly is that these individuals now have the tools and knowledge to improve management of their pastures. This should equate to reduced input costs and increased productivity. Also, 91% of producers responded they learned that 5% of dry matter could be lost in barn storage.

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

O: Learners are aware of new, accepted, or recommended production practices and emerging technologies and issues (BQA, NAIS, etc.) I: Number of participants at educational events.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual

2015 2629

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Proper and safe use of pesticides is of concern to everyone whether they are in agriculture or not. Also, cover crop production and soil conservation is of concern to agriculture producers and reducing soil erosion is of national concern and a major focus of USDA programs.

What has been done
Three pesticide applicator recertification programs were conducted and one pre-license training for those seeking an applicator license. Also, three different cover crop meetings were offered with the results of project work.

Results
1020 pesticide recertification credits were distributed to license holders, both private and professional. Twenty new licenses including both private applicators and professional applicators. Professional licenses allow holders to find employment or advance in current employment. The cover crop field tour showed producers and agency personnel how cover crops can be adopted in the Magic Valley region and what crop species can be used to achieve varying producer and government program goals.

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: 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: 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 Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	245

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Consumers of beef and beef products demand a safe, wholesome, and quality product. Today's beef producers need the knowledge, tools, and skills to produce safe, high quality beef.

What has been done
In collaboration with three University of Idaho Extension Educators, beef quality assurance (BQA) training and certification sessions were planned and delivered in several locations around the state.

Results
Approximately 75 individuals attended a beef quality assurance (BQA) certification session. Each of the attendees left with knowledge of management practices and protocols that lead to greater beef quality. Approximately 60 individuals successfully completed the BQA certification process.

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)

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

Severe wildfires broke out in August of 2015. These wildfires burned many pastures, ranges, hay barns, home, and other structures in Idaho, Lewis, and Clearwater Counties. To address the loss of forages and pastures, a pasture and hay clearinghouse was developed in Idaho County. The clearinghouse provided information on available pasture and hay for sale.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Approximately 225 individuals (beef producers, rangeland users/managers, students, veterinarian, faculty, etc.) attended the 2015 Idaho Range Livestock Symposium (IRLS). The symposium was held in three locations across the southern part of the state with a tour following the third and final symposium stop. A post-program evaluation was conducted following the symposium. Ninety-seven percent of the respondents indicated the knowledge gained during the symposium would benefit their operations economically or assist them in their operations. All respondents indicated they would like to see the program continued in the future. Approximately eighty percent of the respondents, when asked if the symposium topics were relevant, indicated yes or very much.

Key Items of Evaluation

While it is difficult to describe in dollars and cents, I played a significant role in assisting ranchers affected by the devastating Soda Fire. A thank you card that I received from one family stated "Mere words are so inadequate to say how much all your support, help, organizing, and follow through is appreciated. All that you took care of during such a time allowed us to focus on the immediate needs that we had to deal with. Thank you for all you do to support the industry, community, and people."

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%		15%	
111	Conservation and Efficient Use of Water	0%		7%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		15%	
202	Plant Genetic Resources	20%		15%	
205	Plant Management Systems	25%		10%	
211	Insects, Mites, and Other Arthropods Affecting Plants	5%		15%	
212	Pathogens and Nematodes Affecting Plants	10%		12%	
213	Weeds Affecting Plants	10%		10%	
216	Integrated Pest Management Systems	15%		0%	
502	New and Improved Food Products	5%		1%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	4.6	0.0	10.0	0.0
Actual Paid	7.2	0.0	9.0	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**
272653	0	382236	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
272653	0	382236	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
317190	0	4574725	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 13,219 direct educational contacts through Extension and 185,206 indirect contacts. Team members published two articles in refereed journals, three peer reviewed multi-state Extension publications (PNW), and participated in projects funded by $912,969 in grants.
Multiple cereal schools were conducted throughout the state and allowed Extension faculty to interact with growers and provide technology transfer for new varieties. Topics included: irrigation management, improving water use efficiency, varietal performance, diseases, seeding rates, herbicide resistant weeds, proper chemical management, fertilizer management in barley, farm bill update, insect impact and control, and falling numbers in wheat and barley.
Other methods of transferring knowledge to producers, industry, and the public included 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 growers and field workers advisory committees, commodity commissions, processors, and industry representatives to pass on current research data, share knowledge, implement projects, and get their feedback. The team also tested samples for growers and provided quick response to this year's barley yellow dwarf virus (BYDV) outbreak.
Publications included newsletters, Extension publications, progress reports, scientific publications, and general media articles. Topics covered this year included current disease conditions in cereals, and organic wheat production as a profitable niche for conventional wheat producers in the Inland Northwest. One team member updated three chapters in the PNW Weed Management Handbook.
Team members engaged in 20 unique research activities with 396 cooperators and collaborators. Research topics included cover crop demonstration trials (funded by an NRCS-CIG grant at ten producer sites in the Magic Valley), the Hessian Fly population in Lost River Valley, BYDV alternative weedy host research, weed control studies, use of winter triticale as an alternative winter cereal, organic pest control, soil acidity, and nitrogen application. Research also leveraged our 2014-17 USDA-NIFA-EIP award with the resources of the NIFA-AFRI Coordinated Agricultural Project Regional Approaches to Climate Change for Pacific Northwest Agriculture to increase adoption of IPM practices among commercial wheat producers and their advisors.
Team members interacted with other professionals at meetings to transfer knowledge, form alliances, and implement projects. Faculty participated in 26 different grower meetings attended by 1,412 members. Presentations at meetings, workshops and field days focused on subjects such as adapting alternative crops into cereal cropping systems, irrigation of cereals, water and nitrogen use efficiency improvement, crop rotation, drought tolerance of winter wheat varieties, and plant growth responses to manure application.
Additionally, during this timeframe there was 1 plant variety patent applied for ('UI-WSU Huffman' wheat) and 1 plant variety patents issued ('UI Silver' wheat).

2. Brief description of the target audience

Cereal growers in Idaho - will be provided with technology to enhance cereal production and profitability and provide feedback and suggestions of needs and areas of concern for profitable cereal production. They will also provide resources for the project through direct use of facilities, and through checkoff contributions to commodity commissions.
Agribusiness and support workers - will provide resources for technology development and delivery, be targets for information delivery, and provide feedback and suggestions for directions of the program.
Other target audiences include elected officials, nonprofits, landowners, Extension educators, other researchers, and the general public.

3. How was eXtension used?

Use of eXtension was in this program was primarily as a resource for Extension professionals.

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	12973	84222	246	984

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

Patent Applications Submitted

Year:	2015
Actual:	1

Patents listed
'UI-WSU Huffman' wheat - PVP# 201500295(3/17/2015)

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	3	19	22

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Idaho Cereal Schools.

Year	Actual
2015	27

Output #2

Output Measure

- Release and adoption of new cereal varieties.

Year	Actual
2015	0

Output #3

Output Measure

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

Year	Actual
2015	15

Output #4

Output Measure

- Develop pest control technology - project/experiments.

Year	Actual
2015	20

Output #5

Output Measure

- Research on management systems - projects/experiments.

Year	Actual
2015	33

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.
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.
6	To improve sustainability for small grain production, a clear understanding of the ecological interactions among crops and biotic and abiotic environmental factors is essential.
7	Identification of factors impacting northern Idaho dryland crop production.

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
2015	2751

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Cereal producers need to know more about current insect issues, crop rotations, cover crop adoption, and manure application and research being done regarding them. They also need to learn about Best Management practices, variety updates, and new research being done in cereal production. They need to see in person how varieties are growing and performing in our area during the current growing season. Presentations to diverse groups of interested stakeholders are important to ensure all groups have access to information on production practices. Not influenced by market forces, Extension has the ability and credibility to provide new information so that growers and consultants are willing to accept and adopt the information.

What has been done
48 faculty days were invested in 23 different field days and tours. Faculty participated in 26 different grower meetings attended by 1,412 members. Eleven cereal schools attracted 532 growers to learn about topics ranging from fertilizer and irrigation management to varietal performance, diseases, and seeding rates.

Results
More than 2,200 learners participated in field days and tours in 2015. In many instances adult learners prefer not to submit to a detailed evaluative mechanism, pre- and post-tests using wireless audience response systems have shown that the knowledge gained by the clientele has been significant. Providing updated information about small grains during on-farm visits is also highly effective. Educators give out publications at farm tours, surveys and the county fair as well.

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.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	1224

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Improved information dissemination will ensure growers and interested individuals are aware of the most current management practices and production trends. Cereal producers and their crop advisors are concerned about management of new and resurgent pests. Interest is high about field scouting methods, economic injury levels, cultural and biological control, and judicious pesticide use. Also, results of the small grain variety trials are summarized each year. This information is important to north Idaho stakeholders along with private and public breeders throughout the northwest. After the outbreak of barley yellow dwarf virus (BYDV) in southern Idaho in 2015, print outs of our CIS publication was distributed among growers in meetings.

What has been done
Materials have been distributed at farmers markets, tours, on-farm visits, field days, Idaho Barley Commission newsletter, BYDV forum, cereal schools, workshops, and via direct emails. Also, a summary of the 2014 small grain variety trials was published as a research bulletin: '2014 Small

Grain and Grain Legume Report.'

Results
North Idaho stakeholders and breeders receive current, objective information on new varieties, advanced breeding material, and current pest outbreaks. This information is vital to north Idaho stakeholders in aiding them in selecting varieties that will perform the best in their specific locations and managing for pests as well. For the breeders, this aids in identifying germplasm that is best suited for the different parts of northern Idaho. This in turn will result in future varieties that will be specifically adapted to the growing conditions in northern Idaho, allowing growers to maximize yields while minimizing risk due to diseases and pests.

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).

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	265

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
New varieties of wheat and barley are continually being developed by public and private breeders. The new varieties may have a number of beneficial traits such as improved disease resistance, better adaption to certain regions, higher yield, and improved end use quality. With the

new varieties being released by multiple sources, it can be difficult to select varieties. The north Idaho variety testing program provides an objective evaluation of these new varieties.

What has been done
Variety trials were conducted at various locations throughout northern Idaho. These included 7 fall trials and 8 spring trials of wheat and barley. The varieties were discussed at field days during June and July and the results of the top released varieties were presented at cereal schools, highlighting the newest releases and their advantages and disadvantages. A summary was also prepared as a Research Bulletin.

Results
Growers, seed dealers and breeders regularly refer to the results generated by the north Idaho variety testing program. The information on yield and other agronomic characteristics is useful to inform growers and seed dealers about these new varieties to help them in selecting the best variety or varieties for their area. The results also provide public and private breeders with information on local and regional adaptability of their varieties. By having locations spread throughout northern Idaho in unique climates, the varieties are exposed to varying environmental conditions and diseases.

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources

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
2015	207

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Agricultural production impacts the environment both on and off the farm in various ways. Soil quality can be improved or degraded, depending on choice of farming methods. Greenhouse

gases can be sequestered or emitted, depending on numerous factors. Also, soils in northern Idaho are gradually becoming more acidic, primarily due to the long-term use of ammonium-based fertilizers. As the soil pH declines, the risk of free aluminum, which is toxic to many crops in northern Idaho, increases. Aluminum toxicity can lead to reduced vigor and yield in most crops.

What has been done
Through a series of multimedia case studies, growers have been featured who have adopted methods for decreasing greenhouse gas emissions and enhancing soil quality. For example, the first case study features a direct seed producer who uses variable rate nitrogen fertilizer application. Also, the field research plots that were limited in the fall of 2013 continued to be monitored and sampled during 2015 to identify sources and rates of lime to alleviate soil acidity. Additional trials focused on understanding the impact of soil pH on nutrient use efficiency and impact on plant pathogen activity.

Results
More growers have been exposed to new methods for reducing adverse environmental impacts from agricultural production. Grower-to-grower mentoring has been facilitated at local and regional meetings and conferences. After study, lime application appears to improve the availability and/or the efficiency of plants to take up lime early in the growing season. However, in the first year of the study there was not a yield response that corresponded to increased biomass earlier in the growing season.

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.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

To improve sustainability for small grain production, a clear understanding of the ecological interactions among crops and biotic and abiotic environmental factors is essential.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
For the small grains industry in central and eastern Idaho a major pest is wireworm which threatens production of both wheat and barley. For the most damaging species, insect movement and the inflicted damage will be correlated with environmental variables to determine suitability and timing of different management approaches in order to achieve reduction of insect pressure.

What has been done
A survey for south central and eastern Idaho was completed. Key species collected included: Limonius californicus (known as sugar beet wireworm, Aeolus mellillus (Say), Hypnoidus bicolor (Eschscholtz), Limonius canus LeConte, Limonius infuscatus Motschulsky (known as western field wireworm), Selatosomus aeripennis (Kirby), Selatosomus pruininus (Horn) (known as Great Basin wireworm), and Hadromorphus glaucus (Germar). Overall more than 60% of the collected samples belonged to the L. californicus species group (known as sugar beet wireworm).

Results
Generating a visual identification key of wireworm species was completed. This detailed document is currently available to stakeholders and researchers. Additionally, a one-page visual key for distribution among all growers in different venues was produced.

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants

Outcome #7

1. Outcome Measures

Identification of factors impacting northern Idaho dryland crop production.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Soil pH has been on the decline in northern Idaho for decades and as a result aluminum toxicity is present in some locations. As soils become more acidic, the availability of many plant nutrients declines. Little information is available in northern Idaho to relate the nitrogen use efficiency of currently grown soft white winter wheat varieties to soil pH. Eventually, calcium carbonate applications will be needed to ameliorate the soil acidity, reduce the quantity of free aluminum ions in the soils, and improve soil microbial activity related nitrogen cycling.

What has been done
A regional survey was conducted in 2015, with soil samples being collected from additional locations throughout northern Idaho. To date, 87 fields in seven north Idaho counties have been surveyed, soil sampled and analyzed. Data was summarized and used to generate a risk map for northern Idaho. This useful tool is helping growers and consultants better understand the risk of aluminum toxicity and negative consequences of low pH in each region.

Results
Growers are becoming educated about the potential risks of low pH and are beginning to look more closely at the pH when testing soils. There are also individuals who have begun experimenting with soil liming on their farm to look at direct impacts of this practice. Additional information is needed to determine which soils might be at risk of developing aluminum toxicity and there is a need for a better understanding the quantity of lime that is required.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (An unusually warm and wet fall triggered barley yellow dwarf outbreak)

Brief Explanation

The weather in the spring and early summer may have impacted the results of the extension variety trials and research trials. The spring and early summer were drier and warmer than normal. However, the biggest impact was the extremely unusual temperatures that were observed the last week of June, where highs were in the upper 90s to lower 100s. These high temperatures had a negative impact on most fall and spring planted plots. The greatest impact was on spring wheat. The spring wheat had substantially lower test weights and yields than would normally be observed. As a result, most yields for the 2014-2015 growing season were below normal. In addition, protein content in both soft white and hard wheat varieties are expected to be high. While the impact on winter wheat was minimal at many locations since the wheat had finished heading before the high temperatures hit, there is the possibility that the high temperatures and dry conditions may have influenced some of the research results. Of particular concern are the nitrogen fertility studies. Results may be confounded by yields being lower than expected.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

At cereal field day at Parma R&E Center, 93% improved awareness of the topic covered and obtained new knowledge; 59% obtained new skills; 78% modified their opinion or attitude; 75% will adopt practices shown; 40% will increase the operation's diversification; 50% will reduces their use of purchased off-farm inputs; and 65% increased their networking with other producers.

Key Items of Evaluation

Work during FY2015 leveraged 2014-17 USDA-NIFA-EIP award with resources of the NIFA-AFRI Coordinated Agricultural Project Regional Approaches to Climate Change for Pacific Northwest Agriculture. A team of eight faculty, postdocs, and staff began working on this project during Fall 2014 and collaboratively developed beta-versions of location-based degree-day calculators for crop (wheat) and pest (cereal leaf beetle, downy brome) phenology. Feedback from 46 growers and crop advisors who participated in demonstrations of these applications during Feb 2015 included the following: nearly 80% of stakeholders said the IPM decision support apps seemed useful or were a good idea (though 5% said the apps were hard to use); interest was highest in applications about

insect and weed management as well as climate and weather. Team will work during FY2016 on applications that use long-term weather forecasts to determine hazards of pest infestation (wheat midge) as a consequence of seeding date.

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: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	7.7	0.0	1.3	0.0
Actual Paid	6.8	0.0	1.0	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**
164531	0	37080	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
164531	0	37080	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
383090	0	385833	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Horticulture team members reported 26,719 direct educational contacts and 1,204,246 indirect contacts made through Extension programs. Team members published 3 peer reviewed UI Extension publications and participated in projects supported by $215,649 in grant funds.
Beginning Master Gardener classes were delivered serving 12 Idaho counties in 2015. Ada, Nez Perce, and Valley counties delivered shorter, more accessible plant clinics and reached hundreds of learners. Advanced Master Gardener classes and projects were delivered in four counties. Idaho faculty continued to host a regional Master Gardener conference attracting participants from Idaho, Montana, and Wyoming. An Idaho Victory Garden course was delivered in three counties, Canyon, Valley, and Washington. This course has now been taught eight consecutive years, and participants now produce an estimated $152,000 worth of food in their own gardens. Eighteen Growing Gardeners events reached 92 youth. Outreach for commercial producers included collaborations with the Idaho Nursery and Landscape Association to provide instruction at the Horticulture Expo, the Green Collar College, the Turf, Tree and Landscape Conference, and various workshops for fruit, integrated pest management, and for new green industry personnel.
Community classes and workshops reached thousands and included gardening classes, pesticide classes, food preservation, an entomology primer, edible gardening, tree care, and more. Youth-related activities include 4H presentations, a junior Master Gardener class, and presentations at schools. One team member coordinated with local middle school teachers, local Master Gardeners, and an AmeriCorps service member to build garden beds and provide gardening classes at the school.
Supervised Master Gardeners and Advanced Master Gardeners delivered many presentations for local gardening groups and interested publics, served hundreds of residents who sought assistance in plant clinics, and contributed to dozens of community projects including school gardens and community gardens, community beautification, and parks and recreation projects. Extension professionals continued working with the Fort Hall Extension Horticultural program. This program's biggest successes of 2015 were the continuation and planting of a community garden. In fact, 18 out 19 plots were planted this year which was an increase from 2014. In addition, garden attendance increased and improved management techniques were observed for watering, weeding, and harvesting.
In one county alone, 25 new and 35 continuing Master Gardener volunteers contributed about 1,200 hours of community service, with a monetary value of over $15,600. Over 500 home garden clientele were assisted with research-based and environmentally responsible solutions to common garden and landscape issues. Master Gardener Volunteers participated in civic beautification projects at two city parks, and the Extension office. Community garden and food projects led by Master Gardener Volunteers produced thousands of pounds of food for low income residents in 2015.
Media outreach is conducted through regular contributions to local newspapers, 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. Specialized information for consumers is published by UI Extension faculty including illustrated guides for entomology, managing insects, and pesticide training.

2. Brief description of the target audience

Master Gardener Education Project: The target audience for this project includes Idaho citizens who are interested in expanding their gardening knowledge while educating others. The program is designed to develop volunteers capable of providing education that will have an impact on resources management and quality of life within communities throughout the state.
Beginning Master Gardeners are required to participate in 30 to 70 hours of basic training in horticultural 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 includes 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 2015, organized groups from this target audience included the Deer Flat Wildlife Refuge, the Fort Hall Extension Horticultural program, tribal members and departments, community public works departments, garden clubs, garden centers, community gardeners, civic groups, public libraries, church groups, and other interested organizations.
Green Industry Education Project: The audience consists 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, alternative crop producers, organic producers, pesticide applicators, and fruit producers. The team serves this audience via professional development training opportunities and technical assistance.
Underserved Audiences
Current underserved groups include Hispanic, Native American, and immigrant populations. Educational programming to refugee small farmer/gardener audiences in Boise was taught through hands on activities and multiple translators to 24 adults and 18 youth, mostly from Somalia. A Spanish Session at the Potato Conference has run for approximately 15 years with plans on continuing as long as the Potato Conference is a viable program; numbers in 2015 were about 275 participants.
To reach the Native American population, a community garden project was implemented with the Shoshone-Bannock tribes in southeastern Idaho on the Ft. Hall Reservation. Garden plots provided participants learning opportunities of best management practices for planting, weeding, watering, and harvesting.

3. How was eXtension used?

No organized use of eXtension is reported.

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	21719	1197319	5000	6927

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

Patent Applications Submitted

Year:	2015
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	3	2	5

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Advanced MG Workshops/Tours: faculty contribution to Advanced MG Training (Does not include beginning MGs). O: Number of faculty presentations at Advanced MG training events.

Year	Actual
2015	8

Output #2

Output Measure

- Beginning MG Courses Organized/Supervised: Number of MG courses (not classes within a course) organized/supervised by educators. O: Number of whole courses delivered during the past year.

Year	Actual
2015	12

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. I: The number of products developed/published during the past year.

Year	Actual
2015	189

Output #4

Output Measure

- Consumer Education-Websites: Statewide and county websites (faculty-authored) containing current, relevant consumer-based horticultural information. O: The number of actual websites developed or actively improved during the year.

Year	Actual
2015	10

Output #5

Output Measure

- Consumer Education-Workshops, Seminars, Demonstrations, Field Days: Faculty contributions to consumer-based education events (exclude MG classes, reported elsewhere). I: Number of specific faculty presentations at Extension consumer education events.

Year	Actual
2015	149

Output #6

Output Measure

- Green Industry Education-Workshops, Seminars, Clinics: Faculty presentations associated with green industry educational events. O: Number green industry education events and presentations.

Year	Actual
2015	48

Output #7

Output Measure

- Master Gardener-Volunteer Hours: Total number of hours contributed by all volunteers over the past year.

Year	Actual
2015	13089

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. O: The number of current, relevant, active sites.

Year	Actual
2015	3

Output #9

Output Measure

- Direct Contacts with Stakeholders Made by Certified MGs: . Number of direct contacts during the past year by volunteers.

Year	Actual
2015	22132

Output #10

Output Measure

- Faculty presentations to Beginning MG classes: Number of presentations.

Year	Actual
2015	182

Output #11

Output Measure

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

Year	Actual
2015	224

Output #12

Output Measure

- Master Gardener-Volunteer MG Contributions to Workshops, Seminars, and Demonstrations: Number of volunteers who organized or presented at educational events.

Year	Actual
2015	270

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.

Year	Actual
2015	23

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: The average number of key topic areas (out of 25 in the Master Gardener certification exam) in which learners? knowledge increased.
2	Consumer Education-Information: sound horticultural information is current, research-based, and widely available to 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. hits.
3	Green Industry Education - Information Availability. The Green Industry workforce has access to useful research-based pest control and production information. Indicator: Combined numbers of personal contacts and hits on the green industry website.
4	A statewide Master Gardener program that operates according to state policies, ensuring cohesion, program branding and quality that delivers quality education and service to the public. Indicator: The number of Master Gardener programs statewide that operate according to written policy.
5	Green Industry Education-Certification Training: Idaho's Green industry workforce is capable to provide environmentally and economically appropriate services. Indicator: The number of participants passing the exams after Extension training.
6	Master Gardener-New Certification: The desired outcome is a pool of newly trained Master Gardener volunteers to maintain efforts in home horticulture outreach, and to donate their time and expertise to their community. Indicator: Number of new Master Gardeners certified during the past year.
7	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: Number of active, certified Master Gardeners and Advanced Master Gardeners currently serving in counties.

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: The average number of key topic areas (out of 25 in the Master Gardener certification exam) in which learners? knowledge increased.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	138

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Questions about insect identification and management are among the most common problems that UI Master Gardeners are called upon to answer. Most beginning Master Gardeners lack the technical subject-matter knowledge to correctly answer such questions.

What has been done
The team quantitatively measured short-term Logic Model outcomes (i.e., gains in audience knowledge) via pre:post testing of beginning Master Gardeners at workshops. Wireless audience response cards were used as an alternative to written tests.

Results
The short-term Outcomes were highly positive. Pre:post tests (n=122 people participating at 9 venues) showed that average gain-in-knowledge (computed as the difference between pre and post-workshop audience test scores) was 41% (i.e. from 34% correct answers pre-test to 75% correct answers post-test). Further, essentially all participants said they intended to adopt at least one of the integrated pest management (IPM) practices discussed at these workshops.

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: sound horticultural information is current, research-based, and widely available to 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. hits.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	109024

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Idaho's citizens require timely information to increase personal food production, seek sustainable gardening and landscaping practices, and improve the green spaces in their lives.

What has been done
The Idaho Landscapes and Gardens website was developed to provide easy public access to high quality horticultural information. In 2014, about half of the site content was updated and revised to reflect the most current and correct gardening and landscaping information.

Results
General access to information and adoption of best 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

Green Industry Education - Information Availability. The Green Industry workforce has access to useful research-based pest control and production information. Indicator: Combined numbers of personal contacts and hits on the green industry website.

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

A statewide Master Gardener program that operates according to state policies, ensuring cohesion, program branding and quality that delivers quality education and service to the public. Indicator: The number of Master Gardener programs statewide that operate according to written policy.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Master Gardeners provide community outreach in gardening, stewardship, increased understanding of the role of insects in gardening, and plant problem identification. Master Gardeners can identify noxious weeds and invasive species. They can advise neighbors as to research-based advice that they have learned through the program.

What has been done
The Master Gardeners co-taught the Victory Garden Series this year and the pilot program was a success. There were 45 people attending the classes throughout the 6 week series. Also, UI Extension and Latah County provide a low-cost Master Gardener program to the public.

Results
The Victory Garden program was focused on beginning gardeners and this course positioned the first year of the Cascade Food Pantry's community garden initiative to be a great success. Also, approximately 20 master gardeners have been certified including four working as professional

landscapers. These MGs have the ability to identify invasive species and solve pest and disease problems using less chemicals and when needed being more conservative and safer in pesticide use.

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

Green Industry Education-Certification Training: Idaho's Green industry workforce is capable to provide environmentally and economically appropriate services. Indicator: The number of participants passing the exams after Extension training.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Green Industry workers need to be knowledgeable and skilled in diagnosing plant problems and identifying insects, weeds, and plant diseases.

What has been done
Master Gardener classes are opened up to Green Industry workers to take as audit students. Pesticide applicator continuing education units (CEU) were obtained from the ISDA for these specific classes. Also, a workshop was conducted to educate master gardeners about insect identification and management.

Results
CEUs were obtained for 4 of the 15 MG classes and several advanced master gardeners attended the insect identification and management workshop although no rigorous outcome evaluation was conducted on workshop participants.

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 #6

1. Outcome Measures

Master Gardener-New Certification: The desired outcome is a pool of newly trained Master Gardener volunteers to maintain efforts in home horticulture outreach, and to donate their time and expertise to their community. Indicator: Number of new Master Gardeners certified during the past year.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	168

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
As the demand for Master Gardener's expertise and service increases, having well trained volunteers can add significantly to the outreach capacity of each office. Also, retention is a big part of the Master Gardener Program. Without Master Gardeners helping each other many do not complete the program.

What has been done
Master Gardener classes were taught covering soil, compost, soil amendments, xeriscaping, water management, pest and weed control, pesticide safety, plant nutrients, plant diseases, fruit and berry production, pruning, pasture establishment, and lawn and garden establishment. Frequent opportunities for trainees were offered to get them involved. Association members were invited to classes to invite new members to their monthly meetings.

Results
One-hundred sixty-eight program participants completed their Master Gardener certification in 2015, completing the required commitment for community service. In another case, of a total of 40

participants in a different 2015 program, 26 finished their training by completing volunteer hours achieving a retention rate of 65 percent, up 17 percent from this program in the past.

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

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: Number of active, certified Master Gardeners and Advanced Master Gardeners currently serving in counties.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	250

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Master Gardeners take pressure off county Extension offices by answering horticulture questions and making visits as UI Extension volunteers. Also, establishing a good pool of volunteers is important for running a cohesive program from one year to the next. The returning master gardeners are very valuable for helping in plant clinics as they will have likely seen many of the same questions the year before. Also, they are helpful in training the new volunteers.

What has been done

The Master Gardener volunteers have remained involved in the program by helping to teach classes, assisting in demonstration gardens, and by helping in plant clinics. Also offered were recertification exams as an option for those who left the program but were interested in returning and continuing to volunteer.

Results
Retention numbers continued to grow. Master Gardener volunteers were re-energized, active, and worked to lead community based projects, mentored new volunteers, and created dynamic programs in offices, schools, and neighborhoods. Also, there have been many improvements to city parks directly related to MG training. MGs have established 2 new lawn and garden landscaping businesses. City and county workers are using Extension technical information to improve parks and control weeds. For the second year, the city has hired goat grazers to control weeds in the difficult areas of the city and this has proven to be very successful. A video was produced about this new practice.

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

Extremes in temperature, moisture levels, wind, and heat units lead to pathological problems and tends to increase consumer demand for calls and consultations with Master Gardeners. With the downturn in the economy it is harder to fill Master Gardener classes as people work more hours to get by and don't want to pay the fees for the classes. This is counter-balanced by people wanting to save money by growing their own vegetables.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Program evaluations for the Horticulture Team are predominantly associated with assessment of the Master Gardener program. Pre- and post-training exams are used to measure volunteer learning and consistently show that volunteers gain in knowledge and ability to provide education and assistance with horticultural issues and problems.

Key Items of Evaluation

For the past few years, the outreach by Canyon County Master Gardener volunteers focused in the areas of civic beautification, public education, community gardening and youth enrichment for the betterment of the community.

We had ten talented and dedicated Master Gardener School Garden Mentors serving this year in the Treasure Valley, helping Idaho elementary schools and day care centers in their development of a productive, sustainable, edible outdoor classroom.

Our volunteers who started Trinity Community Gardens Inc., a 501c3 non-profit, taught over 10 classes in 2015 on their low input style of high-yield vegetable gardening, along with running a system of gardening and gleaning efforts that put thousands of pounds of food into local food banks. Also this year, they self-published their second book, a collection of recipes to help food pantry recipients use the fresh produce they are receiving.

The Fort Hall Community Garden program provided community members with the means and methods to learn and grow their own food. The Extension gardening program provided teaching methods that individuals and families were able to apply directly to their lives. Our motto is to provide research-based education and then provide hands-on learning opportunities so people can have better memory recall to duplicate what was taught.

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%		25%	
608	Community Resource Planning and Development	10%		40%	
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%		25%	
805	Community Institutions, Health, and Social Services	15%		0%	
806	Youth Development	3%		0%	
903	Communication, Education, and Information Delivery	3%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	4.5	0.0	1.5	0.0

Actual Paid	5.0	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**
161226	0	164999	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
161226	0	164999	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
225090	0	739738	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 5,414 direct educational contacts through Extension and 11,215 indirect contacts and participated in projects funded by $1,500 in grants.
Extension faculty delivered a variety of educational programs for local leaders and entrepreneurs in 2015. Courses including Starting a Small Business (youth oriented), The Dollar Game, and Ready, Set, Grow Your Business brought a range of experts into communities to improve understanding and decision-making skills of participants. Workshops in 2015 focused on business feasibility, marketing, financial management, elevator pitches, and business websites.
Other activities covered topics such as bike and pedestrian paths, backcountry accessibility, drought, wildfire recovery, poverty, youth development, youth entrepreneurship, accessing higher education, local food systems, food security, and connecting education to local economies so communities can be more competitive.
Extension faculty served on local economic development boards and mentored local business start-ups. Extension participated in regional economic development partnerships including the Clearwater Economic Development Association. Statewide partnerships include the Rural Opportunities Consortium of Idaho (to encourage rural entrepreneurship), Wealth Work Northwest (supported by an AFRI grant), Area Sector Analysis Process (also supported by AFRI), and the Idaho Rural Partnership (IRP). IRP conducts community reviews across Idaho (normally one or two per year). Extension participated in the community review in Preston in 2015 and helped plan the Kootenai community review.
Team members participated in community meetings with county commissioners, chambers of commerce, state legislators, and city arts commissions. For example, UI Extension served on the McCall Chamber of Commerce Community Development Committee to develop a submission to the America's Best Communities Contest. These efforts resulted in external funding to develop a regional economic development plan.
The Community Coaching for Grass Roots Action program helps communities focus on action, rather than protracted educational delivery. In 2015, Extension planned a Leadership Retreat for strategic planning, and held workshops to help the city of Aberdeen identify priority projects and develop an organizational structure to sustain their Aberdeen Community Action Network. Extension also conducted a Ripple Effects Mapping exercise with New Meadows as part of this program. One team member also trained faculty at Washington State University in the technique of Ripple Effects Mapping, which measures the community impact of projects. The Lapwai Community Action Team continues to be active, and Extension faculty

have also been involved in a land acquisition study for the Nez Perce Tribe.

2. Brief description of the target audience

Target audiences will participate in educational training opportunities, as well as designing programs, serving on steering committees, teaching curriculum, recruiting program participants, and evaluating and redesigning programs. Target audiences include:

- Business owners
- Economic development professionals
- Government agency personnel
- Community non-profit organizations
- Entrepreneurs - current and future
- Elected officials & decision makers (state & local)
- New leaders and individuals currently serving in leadership roles
- Rural communities
- Nonprofits
- Hispanics
- Youth

3. How was eXtension used?

Use of eXtension is unknown for this program.

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	4260	9935	1154	1280

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

Patent Applications Submitted

Year:	2015
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Steering Committees/Teams formed.

Year	Actual
2015	3

Output #2

Output Measure

- Materials/Curriculum developed.

Year	Actual
2015	3

Output #3

Output Measure

- Presentations/Workshops delivered

Year	Actual
2015	27

Output #4

Output Measure

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

Year	Actual
2015	6

Output #5

Output Measure

- Conference posters/presentations

Year	Actual
2015	5

Output #6

Output Measure

- Boards & Communities - Facilitated/Mentored/Coached.

Year	Actual
2015	16

Output #7

Output Measure

- Communities served.

Year	Actual
2015	22

Output #8

Output Measure

- Counties served.

Year	Actual
2015	22

Output #9

Output Measure

- Web-based educational materials developed

Year	Actual
2015	2

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. I: Number of participants indicated adoption of practices. (customer service follow-up checklist)
3	O: Leadership: Incumbent and emerging leaders learn skills for 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.

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
2015	53

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Rural Idaho residents want more businesses to revitalize their communities. Also, youth in rural communities are facing small job opportunities upon return to their hometowns. They are not equipped with skills to start their own small business, a driving force in rural communities. Developing and retaining mall businesses is crucial for sustaining population and services in rural communities.

What has been done
Small business and WordPress workshops and coaching in three Idaho communities reached 45 learners. Also, a 62 day workshop was delivered to high school youth to learn the basics of starting a small business while operating a fundraiser to gain real life experience.

Results
Business owners report understanding how to create a website as a result of WordPress training and numerous other participants of business workshops reported learning skills they planned to utilize in starting and running businesses. Also, eight youth completed 4 levels of entrepreneurial training and raised almost $5000 in funds while gaining entrepreneurial skills that is intended to help them start a small business later.

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. I: 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 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
2015	62

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Rural communities have been depopulated due to economic changes and experience hopelessness when few leaders are stepping forward to make change for the better. Engendering leadership skills among rural residents can increase volunteerism and therefore the likelihood of collective action in the community.

What has been done
A community leadership program, Community Coaching for Grassroots Action, was continued in one community, launched in another and evaluated in a third.

Results
One community has established a steering committee and action focus areas, while another has taken action in planning and implementing community events, planning a park improvement project and volunteering for other community activities.

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Families need a reliable source of information on healthy living. Also, new parents are largely unprepared for their first child. They have a lack of information on milestone development and tools to help interact positively with baby. New parents are often too busy to seek out this information.

What has been done
Invitations were sent to over 300 people for UI Eat Smart classes or Food preservation classes. A food preserving class was organized and an Extension Educator and Master Preserver was invited to teach. Publications were provided that addressed family issues at the county fair. A food preservation booth at community events gave publications and gathered names for classes. Also,

Just in Time Parenting, an online development resource was sent directly to the inbox of six soon-to-be parents.

Results
The food preservation class was filmed and will be available for future classes. The new Master Preserver promoted the programs at community events in the county. She is working with Extension to provide small food classes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

Outcome #6

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	201

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Youth need to be ready to enter the workforce. Training 4H youth with budgeting, marketing, and the interview process are important facets to after-graduation life.

What has been done
Livestock budgeting, planning and marketing training was given to youth who were raising cattle, swine, lamb and other small animals. All 4H youth who prepared their project books were given an interview to give them the experience needed for job interviews.

Results
Two hundred youth are more prepared to become productive members of the community after leaving high school.

4. Associated Knowledge Areas

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

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)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Small rural communities often struggle with the same challenges throughout the West Central Mountains. Cascade, Donnelly, McCall, and New Meadows mobilized as a region to plan a strategy to address topics that are needed throughout the region including: transportation & infrastructure, health & wellbeing, recreation, housing, year-round employment, and regional communication.

What has been done
The America's Best Communities initiative formalized a regional collaboration and developed an Economic Development Plan for Valley County and Meadows Valley.

Results
The newly formed America's Best Communities Steering Committee branched off of the McCall Chamber of Commerce Community Development Team. This new Steering Committee will now be hosted as a sub-committee of the Valley County Economic Development Council. This sub-committee developed short and long term goals in order to address the identified needs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
603	Market Economics
604	Marketing and Distribution Practices
605	Natural Resource and Environmental Economics
608	Community Resource Planning and Development
805	Community Institutions, Health, and Social Services

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 Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	29

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Research shows that building social capital is a necessary precursor to community development. Creating networks in rural communities provides a context for positive change.

What has been done
Business workshops were formatted to be "training light" and "networking heavy," putting more emphasis on business owners interacting and learning from each other than from the expert presenter at each session.

Results
Twenty-eight participants report finding value in building supportive relationships with other business owners while learning valuable business development skills.

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.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Growers desire new and different ways to expand their production processes. Also business owners in small towns need assistance and training to provide skills and knowledge for their businesses to have a higher rate of success.

What has been done
UI Extension personnel delivered workshops, coached, and consulted with local community members and small business owners in rural communities.
An alfalfa pellet development and quality evaluations were conducted. Dairy quality alfalfa was distributed to growers. Also, small business and Wordpress workshops were provided.

Results

The Educator worked with several growers to develop the nutritional value of alfalfa pellets and targeted market for exports. In addition, from the three small business and Wordpress workshops one business started (online farmers market), one business expanded (food business) and one business launched a website.

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

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

Brief Explanation

One of the most common complaints of rural residents is the decline in public education funding coming from the state. Youth have fewer opportunities to learn beyond the basics and if they aren't sports oriented, there are no extracurricular activities to keep them engaged.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Ripple Effects Mapping in New Meadows indicated impacts from both the Community Review conducted in 2012 and the Community Coaching for Grassroots Action program. Following community review recommendations leadership was expanded on community projects, which resulted in significant progress on a historic depot project. A nonprofit organization was established to support community development activities. Leaders report a better understanding of effective economic development strategies (Community Coaching), and grants ($600,000) were obtained to implement a downtown beautification project recommended by the community review team.

Key Items of Evaluation

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%		25%	
302	Nutrient Utilization in Animals	20%		25%	
305	Animal Physiological Processes	20%		10%	
307	Animal Management Systems	20%		15%	
308	Improved Animal Products (Before Harvest)	0%		15%	
311	Animal Diseases	20%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	2.0	0.0	2.5	0.0
Actual Paid	2.2	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**
149783	0	67715	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
149783	0	67715	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
83689	0	757571	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 4,973 direct educational contacts through Extension and 11,755 indirect contacts. Team members published five articles in refereed journals, one peer reviewed multi-state Extension publication (PNW), and participated in projects funded by $35,000 in grants.

1. 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, feeding programs (including total mixed ration or TMR feeding), herd health, genomics, milk quality, mastitis control, heifer and calf management, and cow comfort. Based on input from our dairy advisory committees, the Idaho dairy Extension team conducts on-farm trainings and producer meetings to share new strategies and provide support.

The team surveyed producers about their participation in an educational needs assessment relative to the Dairy Margin Protection Program (a new program that is part of the farm bill).

The team continued to run collaborative multi-institutional Dairy Genomics Workshops in 7 states: California, Florida, Idaho, New Mexico, Texas, Washington, and Wisconsin.

2. Dairy Workforce Development

The Dairy Topic Team members have continuously developed, improved, and delivered training for Dairy Workforce Development. Undercover video surveillance has recently increased public awareness of animal care and welfare issues. The team responded with a dairy employee-focused program which was implemented to educate in the following areas through dairy Beef Quality Assurance (BQA) trainings:

- Injection techniques
- Humane handling
- Residue prevention
- Lame cow identification
- Body condition and locomotion scoring
- Management of non-ambulatory cows

The team also conducted two large research studies at commercial dairies to examine the effect of this training on selected BQA indicators, as well as the effect of feeding a blood plasma protein on milk production and dairy cows' reproduction.

The increase in employment of Hispanic workers in Idaho's dairy industry prompted University of Idaho Dairy Extension 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 Spanish producers dairy tour.

Other examples of training include ABS GLOBAL RMS workshops and an International Reproduction Program.

2. Brief description of the target audience

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, employees of AI companies, and members of allied industry. Audience venues include farm visits, dairy meetings, DAIReXNET (for producers, allied industry, and Extension), and dairy displays at AgDays events for elementary school and college students.

3. How was eXtension used?

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

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	4600	11730	373	25

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

Patent Applications Submitted

Year: 2015

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	1	9	10

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Winter Dairy Forums.

Year	Actual
2015	1

Output #2

Output Measure

- Milker schools.

Year	Actual
2015	5

Output #3

Output Measure

- Calf Schools.

Year	Actual
2015	1

Output #4

Output Measure

- Artificial Insemination Schools.

Year	Actual
2015	3

Output #5

Output Measure

- Feeder Schools.
  Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Popular Press articles.

Year	Actual
2015	1

Output #7

Output Measure

- Abstracts and Proceedings.

Year	Actual
2015	7

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 and forums.
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).
5	Enhance polyunsaturated fatty acids in milk fat through dietary addition and rumen protection.

Outcome #1

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	335

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 were held in 6 states; one artificial insemination school was held in Idaho.

Results
All participants of the Dairy Genomics Workshops reported that they had gained new knowledge following attendance at the workshops. All participants (100%) attending the Spanish and English language AI School successfully performed semen handling and passing the AI gun through the cervix of a cow.

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).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	21

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Undercover videos of practices on livestock farms have increased public interest in animal care/welfare issues. In 2013, an undercover video from a large dairy in southern Idaho exposed unacceptable practices by dairy workers. The video garnered national and even international attention. One of the best tools to avoid animal welfare problems is to educate livestock industry workers on how to properly handle and treat the animals they care for on a daily basis.

What has been done
An employee-focused training program was developed to teach core components of the dairy BQA program. Topics included injection techniques, humane handling, residue prevention, lame cow identification, body condition and locomotion scoring, and management of non-ambulatory cows.

Results
In order to determine if the training had an effect on dairy worker knowledge of BQA and welfare-related practices, pre- and post-training exam scores were compared for dairy personnel who participated in the training. The overall exam scores increased 21.0 points after the training, from 54.4 for pre-exams to 75.4 for post-exams ($P < 0.0001$).

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 #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).

Not Reporting on this Outcome Measure

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
2015	26

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Open cows cost the dairy industry thousands of dollars each year. Skilled and certified AI technicians will achieve higher pregnancy rates for their cows.

What has been done
Two AI schools were taught.

Results
Twenty individuals demonstrated the required skill level to receive certificates.

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

Outcome #5

1. Outcome Measures

Enhance polyunsaturated fatty acids in milk fat through dietary addition and rumen protection.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Milk fat contains saturated fatty acids, which some have deemed unhealthy for the human consumer. Reducing the amount of saturated fatty acids by using the cow's normal biology to insert double bonds or by feeding polyunsaturated fatty acids protected from rumen biohydrogenation could lead to healthier dairy products. An enzyme stearoyl CoA desaturase (SCD) mostly active in the mammary gland inserts a double bond into saturated fatty acids to produce unsaturated fatty acids. Understanding the regulation of SCD throughout the cow's body may find ways to enhance SCD activity, producing more unsaturated fatty acids. This understanding plus the opportunity to feed unsaturated fatty acids that do not get altered by rumen bacteria could lead to new marketing opportunities for the dairy industry.

What has been done
A cow feeding study was conducted to evaluate the protection of alpha-linolenic acid in ground flaxseed. Two lactating cows were fed two different lipid mixes at 2, 5 and 8% of diet dry matter. After a week of baseline intakes, milk was sampled from both the am and pm milkings for fatty acid analysis. Cows were fed the different feeding levels for a week before moving the greater inclusion. Milk samples were collected on the seventh and last day of each lipid mix feeding level. Dry matter intake and milk production were evaluated throughout the study.

Results

Milk production was similar throughout the study but dry matter intake decreased when cows consumed the lipid mixes at 8% of diet dry matter. This was not unexpected. Alpha-linolenic acid (18:3 n3) in milk increased in a dose-dependent manner from 0.3 (wt% of total fatty acids) to, 0.5, 1.7 and 2.8 for formulation A and 0.3, 0.5, 1.9 and 2.3 for formulation B at 2, 5 and 8% dietary inclusion, respectively. The increase in alpha-linolenic acid was substantial. The results will secure further production of the lipid supplements for expanded testing.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
308	Improved Animal Products (Before Harvest)

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

Dairy prices fell in 2015 despite record high prices in 2014. Reduced immigration from Mexico and Central and South America is reducing the dairy workforce pool. Some producers are compensating by hiring recently arrived refugees, but the language barrier can be an issue.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

An employee-focused training program was developed to teach core components of the dairy BQA program. Topics included injection techniques, humane handling, residue prevention, lame cow identification, body condition and locomotion scoring, and management of non-ambulatory cows. In order to determine if the training had an effect on dairy worker knowledge of BQA and welfare-related practices, pre- and post-training exam scores were compared for dairy personnel who participated in the training. The overall exam scores increased 21.0 points after the training, from 54.4 for pre-exams to 75.4 for post-exams ($P < 0.0001$).

Key Items of Evaluation

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: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	2.8	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**
73152	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
73152	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
153228	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Family Finance Team reported teaching at 244 educational events in 2015, reaching a total of 8,266 learners (4,510 adults; 3,756 youth) and participated in projects supported by $228,970 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 center on financial management skills and include budgeting, credit management, recordkeeping, women's farm financial management, health care finances, insurance, Medicare, late-in-life financial issues, buying a home, planning retirement, and protecting against identity theft. One team member coordinated the Idaho Financial Literacy Coalition, and another developed Idaho-specific program materials related to the Smart Choice Health Insurance program, including training of county educators and assistance in program delivery.
An ongoing partnership with the Idaho Credit Union League resulted in training of high school teachers taking part in the High School Financial Planning Program (HSFPP) through three statewide train-the-trainer workshops in Idaho. Other youth financial management efforts included 81 events teaching Welcome to the Real World to almost 2,000 teens. A variety of other youth-oriented programs included Credit Score Millionaire, Money on the Bookshelf, financial aspects of financing higher education, and teaching adults how to teach financial basics to teens. One educator secured a grant to bring a youth financial literacy program to a community where resources would not allow it in the past. The students learned about financial management in a new and exciting way.

2. Brief description of the target audience

This team's target audience is quite varied and includes people of all ages. Examples include: 4H members, adult 4H volunteers, county residents, Head Start (counselors and parents), low-income individuals, AARP, senior centers, local groups, clubs, associations, teachers, parents, youth group leaders, after-school youth, school age youth, Extension programs, general public, college students, inmates, elderly, mentally/physically disabled, homeless and transitional shelters, and family business owners.
Basic Financial Management: Young adults, people who are new to financial management, and individuals who need to improve their financial management practices. Train-the-trainer activities target professionals who work with people with low-income and/or financial challenges.
Financial Security in Later Life: Adults of all ages planning for their own financial future and also adults who are caretakers of elderly relatives and friends will use publications, websites and/or attend classes. Train-the-trainer activities target professionals who serve elderly clients.
Youth Financial Literacy: Teachers, youth group leaders, parents, and youth are all served.

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

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	4510	106029	3756	28117

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

Year: 2015

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	1	0	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Newsletter articles published; print or electronic.

Year	Actual
2015	53

Output #2

Output Measure

- Popular Press articles.

Year	Actual
2015	13

Output #3

Output Measure

- Professional or paraprofessional trainings.

Year	Actual
2015	10

Output #4

Output Measure

- Classes, seminars, and workshops.

Year	Actual
2015	243

Output #5

Output Measure

- Websites developed or updated.

Year	Actual
2015	4

Output #6

Output Measure

- Lesson/curriculums developed and published.

Year	Actual
2015	4

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 Family Finance information is accessible to new audiences through Extension websites, social media, and use of technology.I: Number of website sessions and pages visited; number of social media followers, number of participants in Adobe Connect, chat, or other trainings offered via technology.

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
2015	1050

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
There is a statewide need for awareness of effective financial management. The need for financial education amongst teens and young adults includes basic skills to manage money, controlling cash flow, spending plans and budgeting, borrowing, earning power, investing, financial services, and insurance.

What has been done
Three statewide High School Financial Planning Program (HSFPP) Train-the Trainer workshops were conducted and six Smart Choice Health Insurance workshops were conducted at the North Idaho Correctional Institution.

Results
38 HSFPP train-the-trainer program participants indicated increased awareness of effective financial management practices on program evaluations. 172 Smart Choice Health Insurance program participants indicated that they were now aware of prescription drug costs after the program.

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
2015	1344

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The average student who graduates from high school lacks basic skills in the management of personal finances. Many are unable to balance a checkbook and most simply have no insight into the basic survival principles involved with earning, spending, saving, and investing. Most students are not prepared to manage financial issues. Today's teens, in adulthood, will be required to take more personal responsibility for actively managing their finances than any previous generation.

What has been done
81 workshops on Welcome to the Real World were taught to teens across the state to 1,989 learners. It is a simulation on personal financial management, budgeting, savings, and career exploration. Students receive instruction and go through a hands-on process.

Results
A subset of the learners displayed knowledge after the class such as: 49% how to write a check, 30% the difference between wants and needs, 65% how to open a bank account, 80% how to balance a checkbook register, 80% how to set up and use online banking, 86% budget percentages for expense categories, 59% the relationship between education and potential earning, 53% time value of saving money.

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
2015	358

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Financial management training programs for low-income persons has grown in need over time. Low-income audiences need relevant curricula. People living in poverty are not interested in how to start a retirement fund or how to buy a house. They want to know how to get affordable childcare for their children or what resources are available to them in their community.

What has been done
The Consumer Financial Protection Bureau (CFPB) created a toolkit called Your Money, Your Goals. This information specifically addresses challenges that people with low to no income face in a day-to-day setting. Along with the help of the CFPB, Extension took these toolkits to a local HeadStart teacher training and introduced the entire toolkit to the field staff who work directly with parents and families who need this information desperately.

Results
Tools shared range from assessing the situation, setting goals, managing income, tax credits, when cash is short, debt, and credit plus many more. The 14 modules contained multiple tools within. Pre-evaluations reported that the majority understood core financial management topics (97%) but when asked if they could discuss this knowledge with clients only 28% were confident, 38% were somewhat confident and 17% not at all. To assess clients' financial situations, only 62% felt somewhat capable of doing this. They were unsure where to get unbiased information (52% were somewhat sure while 24% not at all). Post-evaluations shared that the Your Money, Your Goals program would meet client needs (52% said strongly agree; 48% said agree). Sixty-eight percent of the participants plan to use the tools, 4% said no, 20% didn't answer at this time. The majority of participants reported that their confidence levels rose for teaching each of the topics to very confident or confident.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #4

1. Outcome Measures

O: Extension Family Finance information is accessible to new audiences through Extension websites, social media, and use of technology.I: Number of website sessions and pages visited; number of social media followers, number of participants in Adobe Connect, chat, or other trainings offered via technology.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	1714

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
People need unbiased financial information delivered via a variety of technologies. In low-income counties where funds are limited for county entities to function, but also for the individual families, it is important to recognize the need for youth and adults to learn about financial management.

What has been done
Technology is used to make information accessible to a wide variety of people in near and far locations. Also, the website was designed to provide information and links to University financial websites and publications.

Results
The Extension social media presence and impact is increasing. The team is just beginning the Solid Finances webinar series in Idaho to increase impacts. The Solid Finances program is a series of free financial education webinars designed to empower learners to take control of their finances. Topics include home buying, disaster planning, emergency savings, insurance, estate planning, probate on real property, trusts, and retirement planning. Also included is ?Purchasing a Cellphone Plan? offered in Spanish.

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

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

Brief Explanation

The economy and competing factors are almost always a concern in personal finance education. Public opinion frequently shifts due to these factors and can influence the way programming is delivered. The fires that occurred at the end of July and continuing into the month of October 2015 heavily impacted the public's need for resources as well as education to deal with the situation at-hand and prepare for future occurrences.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

At the high school Welcome to the Real World (WTRW) personal finance program, over 50% learned the relationship between education and potential earnings, how to make spending choices based on income, and how to balance a check register. Over 40% learned the importance of saving money, the benefit of compound interest, and how to write a check. They were also asked what they would do as a result of participating in WTRW. 93% said they will think about future education plans and choices and 90% said they will go to college or get vocational training after high school. 87% of students said they have or will open a savings account and 94% reported that they will save at least 10% of their take-home pay. 74% said they had or will open a checking/debit account, 92% will keep track of checking and savings balances, and 95% will make spending choices based on their income.

Key Items of Evaluation

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%		10%	
601	Economics of Agricultural Production and Farm Management	25%		20%	
602	Business Management, Finance, and Taxation	25%		10%	
603	Market Economics	15%		0%	
605	Natural Resource and Environmental Economics	15%		20%	
606	International Trade and Development	10%		10%	
609	Economic Theory and Methods	5%		10%	
610	Domestic Policy Analysis	5%		20%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	3.5	0.0	2.0	0.0
Actual Paid	4.8	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**
126197	0	180353	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
126197	0	180353	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
288099	0	598502	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Farm and Ranch Management team reported 14,791 direct educational contacts and 15,255 indirect contacts. Team members published 4 refereed journal articles and 3 peer reviewed Extension publications. In addition to articles in refereed journals and Extension publications, team members devoted 34 faculty days to evaluations, consultations, and farm visits, making 506 contacts. Team members also participated in projects supported by $5,000 in grant funds.
The Farm and Ranch Management team provided Farm Bill training at 46 events, reaching 2,275 learners throughout the state. In addition, seven Extension educators in seven counties were trained to be trainers for future events. The team provided a variety of other training activities related to farm management and estate planning. Individual schools included Tools School (9 events, 88 learners), Beef School (2 events, 95 learners), Forage School (2 events, 42 learners), and Cereal School (1 event, 50 learners).
Three courses were developed in 2015. They include QuickBooks for Profit (three-day, twelve hour workshop on effectively using QuickBooks for business recordkeeping and management in agriculture), Keeping the Legacy Alive - Farming Together for a Better Future (three-day, twelve-hour workshop on farm business succession, and Annie's Project (six-week class series including topics such as financial, legal, marketing, human resource, and production risk).
A very successful program piloted in 2014 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. In 2015, seven Ag Outlook seminars and presentations reached 435 learners.
Other important tools developed and used by UI Extension include new and updated enterprise budgets. These budgets are distributed at workshops and other events, and are available online, to improve producers' ability to make sound financial decisions about their operations.
Other activities include a Farm Safety day camp (reached 91 youth), two farm tours in Iran (reached 117 learners), testimony before the Idaho State Legislature on Idaho's agricultural economic outlook (4 times), working with students, and providing assistance to a grower cooperative to help secure a grant to provide members with safety training information for their workers. One team member negotiated with the Shoshone-Bannock Jr./Sr. High School to conduct a farm business management program at the high school for 2015-16. This 18- week farm business management course in Fort Hall is aided by a tribal scholarship program, which will pay course fees for tribal members.

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, improve their efficiency, and evaluate alternative crops/cropping systems or alternative livestock/livestock production systems. Other target audience members include Native American farmers and ranchers, farmers and farm workers with disabilities, female producers, lenders, industry personnel, insurance agents, post-secondary 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

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	14693	14460	101	795

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

Patent Applications Submitted

Year:	2015
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	3	11	14

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Farm Management Schools/Classes.

Year	Actual
2015	3

Output #2

Output Measure

- Crop & Livestock Costs and Returns Estimates Published.

Year	Actual
2015	18

Output #3

Output Measure

- Media Contacts.

Year	Actual
2015	62

Output #4

Output Measure

- Workshops/presentations at Commodity Schools/conferences, Farm Management Schools or other appropriate venues.

Year	Actual
2015	75

Output #5

Output Measure

- Office/one-on-one consultations

Year	Actual
2015	497

Output #6

Output Measure

- Hits on Idaho AgBiz web site

Year	Actual
2015	200

Output #7

Output Measure

- Pupular press articles and papers in prodeedings published for commodity schools

Year	Actual

2015 8

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 and 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.
5	Analyze the effects of exchange rate changes on agricultural markets.

Outcome #1

1. Outcome Measures

O: Educational material is widely available to clientele. I: Number of publications and other resources distributed

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	1283

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Agribusiness is Idaho's largest industry therefore monitoring the financial health of Idaho agriculture is a continuous concern for policy makers and industry leaders. The financial condition of agriculture can be very volatile. Timely information has not always been available for state legislator's regarding the financial condition of Idaho agriculture.

What has been done
The tri-fold, Economic Contribution of Idaho Agribusiness, is the most widely circulated publication CALS has ever produced. The information is reported in every major and minor newspaper in Idaho and the Northwest. The financial condition is one of the only extension programs 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).

Results
This financial conditions program has propelled the University of Idaho to be the foremost spokesman for Idaho agriculture. Without this program, CALS would have less presence within the state legislature, newspaper visibility, and recognition by other agriculture groups. The result is that CALS has eclipsed other Idaho agriculture groups in testimony before the state legislature. Requests come in throughout the year from legislators, Lt Governor, Farm Bureau, and many other groups for additional analysis or presentations.

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
2015	2245

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Growers in the longitudinal survey state that they would like to implement variable rate nitrogen but that they have not been able to figure out how to do it on their farm. This is just one of the innovative practices featured in the set of 11 case studies that are being developed through the REACCH project.

What has been done
The first case study features Eric Odberg, an innovative grower near Genesee, ID, who has successfully added a variable rate fertilizer applicator to his farming system. A video interview of Eric was conducted about his variable rate system. This multimedia case study was produced as a PNW Extension publication. Clicking on the photos provides a view of enlarged versions in better detail, and the video is also embedded within the document.

Results
This case study and video were very well received. The manufacturer of the variable rate applicator features the video at his booth during trade shows, and the grower is often there as well, in order to help mentor other growers. The video was also featured in the plenary session of the PNW Direct Seed and Oilseed conference. Eric has been invited to describe his experience at regional and local grower meetings. The video is also available online as a standalone product through YouTube. The video helps promote the detailed Extension bulletin that accompanies it.

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
2015	379

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Water is the most important issue facing Idaho agriculture. Idaho ranks second in the nation in irrigation withdrawals. The issues and programs are summarized as: Conjunctive use of ground and surface water is at the heart of many of Idaho's water conflicts. The eastern Snake River Plains aquifer is the size of Lake Erie. That aquifer is created and recharged by surface irrigation activities. Water calls, such as last year's call, threatened to shutoff water to 157,000 acres in the Magic Valley.

What has been done
Workshops and planning meetings were conducted with the Bureau of Reclamation (BOR) and Idaho Department of Water Resources (IDWR) to improve the benefit cost analysis of water projects. The team is conducting research on water calls, rule curves for reservoir management and will resubmit the USDA grant for water quality. Testimony was provided to the Idaho legislature and we were the keynote speaker for the Mid-Snake, Bingham County Economic Development, Nampa Caldwell Chamber and other Magic Valley water users and communities.

Results
The BOR is slowly adopting our new guidelines as a format to conduct their water management plans and cost/benefit analysis. The revised Boise Valley water management plan for climate

change was developed by the team. Many stakeholders (Mid Snake) have been helped to plan for the upcoming water calls in the Magic Valley. The impact of this policy program is reaching the highest levels of government. The team presented at two conferences in southern Idaho. In attendance at those conferences were: Senator Reich and his staff, Idaho Groundwater Association Executive, Head of Idaho Department of Water Resources, Chair of Idaho Water Board, Several state legislators, and Mayors and county commissioners.

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
2015	202

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Producers did not have good understanding of the new farm bill provisions for crop insurance. Also, farm business succession is a difficult task facing farm families. Many farmers and ranchers use QuickBooks but most underutilize its functions that support better management and increased profitability. Farms and ranches can potentially be lost due to taxes and other financial issues that could have been minimized with proper planning.

What has been done
Extension educators attended training and presented information to grain producers across the state. Producers were polled at the end of each training to see if they intended to use the data

presented. Also, two QuickBooks 3-day, 12-hour workshops were offered to address the issues of better financial management and increasing profitability.

Results
136 grain producers out of 195 rated degree in which they plan to use the information given above a "5" rating from 1 - 7, with the higher rating the more apt to use the information. In addition, all 43 QuickBooks participants indicated intention to adopt practices presented or indicated they had already adopted.

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 #5

1. Outcome Measures

Analyze the effects of exchange rate changes on agricultural markets.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The undervalued Yuan is a factor that contributes to the US bilateral trade deficit with China. The heightened debate over the value of the Yuan may lead to trade retaliation. This research aim is to provide a historical review of the Y/$ exchange rate movements, review the U.S. congressional bills to revalue the Y/$ exchange rate and Chinese Government's reactions, presents a conceptual analysis of the effect of the undervalued Yuan on trade between China, the USA, and competitors, empirically estimate the effects of undervalued Yuan on U.S. exports, and discuss the arguments for and against the revaluation of the Yuan.

What has been done

The study analyzed the effects of the Yuan devaluation on U.S. commodity exports to China and U.S. imports from China. The U.S. claims that the undervaluation of Chinese currency, the Yuan, causes U.S. exports to China to decrease and imports from China to increase. Furthermore, because the Yuan is undervalued only against the dollar, U.S. competitors have an advantage in exporting to China and China has an advantage over its competitors in exporting to the United States. This study developed a theoretical model to analyze the effect of the Yuan undervaluation on prices, supply, demand, and trade in the United States, China, and their competitors. Additionally, this study applied a cointegration/error/correction model to empirically quantify the short-run and long-run effects of the devaluation of the Yuan on important agricultural commodities traded between the U.S., China, and their competitors. These commodities include Chinese imports of milk, soybeans, and cotton and from the United States and U.S. imports of beans, fruit juice, and fruit from China.

Results

The results show that Yuan devaluation causes Chinese imports of U.S. milk, soybeans, and cotton to decline and U.S. imports of beans, fruit juice, and fruit from China to increase in the short run and in the long run.

4. Associated Knowledge Areas

KA Code	Knowledge Area
603	Market Economics

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The government from time to time offers new provisions in a farm bill that will allow producers to utilize money that is able to help the farmers dissipate the risks of farming. Those risks often are related to weather changes. Producers wanting to manage risk will utilize programs that are not cost prohibitive to enable themselves to have a safety net of sorts. Almost on a yearly basis, producers will suffer losses in one commodity or another due to weather or government policy.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

In 2015, the Eastern Idaho the farm management team held a four-day estate planning seminar. Twenty producers participated in the Farm Succession and Estate Planning workshop held in Idaho Falls. An evaluation of the program showed: 100% of participants indicated they had started or planned to begin the estate planning and farm succession process. 96% of participants said they planned to put a team (accountant, lawyer, financial planner, etc.) together to assist them with estate planning. In addition, 100% said they would or already had recommended the program to a friend.

Key Items of Evaluation

130 producers and lenders attended the Idaho Ag Outlook Seminars in Burley and Idaho Falls. This was the second year of this program. After several years attending an outlook seminar by the Cattle Fax organization in Denver it was decided that producers in Idaho could benefit from a similar program here in Idaho. University of Idaho combined resources with industry to provide an outstanding program for the agriculture industry in Idaho. An evaluation of the program showed the following: 96% of participants rated the quality of the Idaho Ag Outlook Seminar as "very good" or "excellent." 100% said they would recommended the program to a friend. When asked which topics would assist them with decision making in the future, participant responses were: Global Ag Outlook 80%, U.S. Economic Outlook 73%, Idaho Ag Outlook 82%, Input Cost Trends & Outlook 73%, Grain Situation & Outlook 85%, Potato & Sugarbeet Situation & Outlook 64%, Beef Cattle Situation & Outlook 84%, and Dairy & Alfalfa Situation & Outlook 84%.

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%		25%	
503	Quality Maintenance in Storing and Marketing Food Products	20%		0%	
504	Home and Commercial Food Service	30%		0%	
603	Market Economics	0%		25%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	30%		50%	
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: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	3.3	0.0	1.5	0.0
Actual Paid	4.4	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**
43503	0	164667	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
43503	0	164667	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
181489	0	835283	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Food Safety team delivered more than 200 educational programs for widely diverse audiences, totaling more than 10,000 learner contacts. Seventy food preservation classes were delivered to 1,521 learner contacts during 2015. Topics of individual workshops and presentations ranged from critical errors in pressure canning to foodborne illnesses and canning specialty foods.
Thirty-four workshops for Master Food Safety Advisors resulted in 693 educational contacts, while another nine classes for advanced Master Food Safety Advisors were delivered to improve skills and enhance volunteer retention for approximately 70 continuing volunteers. Preserve@Home is a web-based course that was taught with educators from four Idaho counties, plus educators from Colorado and Oregon.
UI Extension taught 17 sessions and facilitated the delivery of Ready, Set Food Safe classes were taught in 4 counties, resulting in 52 graduates who completed the safe food handling certificate program. More than 2,800 Idaho children participated in Germ City at elementary schools across the state. Food Safety faculty and Master Food Safety Advisors presented thirteen workshops on food safety instruction and reached 640 learners, and faculty reached another 2,813 individuals through booths and tables at 23 health fairs, farmers markets, preparedness fairs, and county fairs. UI Extension provided food safety education 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.
Food safety programs delivered to industry included Food Safety Technical Assistance, Food Safety Certification Project, Food Safety Certification Preparation, Leadership Development & Supervisory Skills Training, and Lean Manufacturing & Efficiency Training. Public workshops included Introduction to Food Safety & HACCP, Internal Auditor Workshop, Practical Food Safety & HACCP Workshop, Seafood HACCP, Dairy Microbiology Lab Methods, and a Pasteurization Workshop.
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, and others.
Master Food Safety Advisor / Master Food Preserver -- Consumers with a particular interest in home food preparation and food safety topics and in sharing that knowledge with 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.
ENP-EFNEP Food Safety - Limited-income families receiving food stamps or eligible to receive food stamps (27 counties) and limited-income families with children (4 counties). These families also participate in Hand Hygiene Education.
Other target audiences include Idaho regulatory personnel, food entrepreneurs, and seafood processors.

3. How was eXtension used?

It was not reported whether eXtension was used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	6739	222692	3538	1100

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

Year:	2015
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	0	6	6

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of food safety calls answered.

Year	Actual
2015	2007

Output #2

Output Measure

- Consumer food safety classes taught.

Year	Actual
2015	99

Output #3

Output Measure

- Number of new certified Master Food Safety Advisors.

Year	Actual
2015	18

Output #4

Output Measure

- Number of re-certified Master Food Safety Advisors.

Year	Actual
2015	40

Output #5

Output Measure

- Number of volunteer hours logged by MFSAs.

Year	Actual
2015	610

Output #6

Output Measure

- Students receiving a RSFS certificate.

Year	Actual
2015	39

Output #7

Output Measure

- Participants in hand hygiene education programs.

Year	Actual
2015	3395

Output #8

Output Measure

- Number of Preserve@home students passing the final test.

Year	Actual
2015	63

Output #9

Output Measure

- Number of individuals receiving ServSafe certification.
  Not reporting on this Output for this Annual Report

Output #10

Output Measure

- Number of classes taught by MFSA volunteers

Year	Actual
2015	4

Output #11

Output Measure

- Number of food preservation equipment safety checks.

Year	Actual
2015	717

Output #12

Output Measure

- Number of food safety questions categorized as a potentially serious food safety issue that could cause illness or even death.

Year	Actual
2015	457

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 certified 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: Other scientists are aware of our research findings. I: Number of refereed scientific journal articles.
7	O: ENP-EFNEP Food Safety-Low income family members will practice safe food behaviors.I: Number of EFNEP graduates reporting intent to adopt practices.
8	O: Interested consumers will learn skills through Preserve@Home I: number of people completing program

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
2015	592

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
One out of six Idahoans are affected by food borne illness; some groups such as elderly, pregnant women, and children are particularly vulnerable. Knowledge about safely storing and preparing food is declining as this information is omitted from school curricula. Annually, about 6,000 consumers call Idaho Extension offices for food safety information.

What has been done
UI Extension has established itself as a reliable source of safe information for home canners. Ten one-time food safety/nutrition/food preservation workshops were conducted.

Results
347 youth and adults received critical information about how to keep their families safe in the kitchen. Ninety-five percent of 144 callers intended to use the advice given on the phone.

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 certified Master Food Safety Advisors.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	33

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Through extensive organization and implementation of training programs, Master Food Safety Advisors were trained and Advanced Master Food Safety Advisors increased their knowledge in food handling to then share with general public.

What has been done
Trainings cater to "hot" topics and trends and properly educate advisors on the research to address questions and concerns. Four update trainings were conducted to keep volunteers current on new food safety and food preservation practices.

Results
Seventeen volunteers signed contracts for the 2015 year. Sixty-two canning lids were tested, 612 consumer questions were answered by volunteers, and 510 volunteer hours were contributed.

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 Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	31

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In 2015, 27% of employed youth (16-24 years of age) work in leisure and hospitality, of which foodservice is a big portion. Over 70% of teens work in food service as their first job. Forty-one percent of the total food expenditures in 2014 were spent on food away from home. Many Idaho high schools have vocational food service programs, including in-school cafes or bakeries, where food is prepared for public sale.

What has been done
Ready, Set, Food Safe was taught two times to people who planned to enter the food service industry.

Results
91% of 34 students passed the test and received the Idaho Food Handler?s Certificate.

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
2015	1702

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Hand washing is important in the prevention of foodborne illness, transmission of pathogenic bacteria and disease prevention, however, it is an often overlooked behavior. Studies support the need for behavior change as well as for effective hand washing education. MRSA and H1N1 outbreaks in the last few years have stressed the importance of this type of education.

What has been done
Providing proper hand washing classes encouraged youth to practice these skills personally and then continue to utilize at home. The Germ City Curriculum was used in classrooms to teach youth about the importance of hand washing.

Results
All youth participants were able to observe how effective their own hand washing practices were. They also observed how they could improve their current practices. In Cassia County, 344 youth went through hand washing education. 76% youth indicated that they plan to work on washing their hands after coughing and sneezing, 78% after playing or working outside, 75% before preparing or eating food, 75% after using the restroom, and 75% after playing with pets.

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.

   Not Reporting on this Outcome Measure

Outcome #6

1. **Outcome Measures**

   O: Other scientists are aware of our research findings. I: Number of refereed scientific journal articles.

   Not Reporting on this Outcome Measure

Outcome #7

1. **Outcome Measures**

   O: ENP-EFNEP Food Safety-Low income family members will practice safe food behaviors.I: Number of EFNEP graduates reporting intent to adopt practices.

   Not Reporting on this Outcome Measure

Outcome #8

1. **Outcome Measures**

   O: Interested consumers will learn skills through Preserve@Home I: number of people completing program

2. **Associated Institution Types**

   - 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	94

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many home canners are inexperienced and may not have been trained in safe home food preservation techniques. Home food preservation has seen a resurgence in the last few years and can be attributed to people wanting to live a healthier lifestyle, cut grocery costs, and to eat foods that are locally grown. There are very few organizations that provide training for individuals to learn how to safely preserve foods at home.

What has been done

Three sessions of Preserve@Home to 63 participants were taught. Also, conducted two online Preserve @ Home courses so that individuals could receive proper instructions on how to preserve food at home even though they could not attend a class in person.

Results

Forty-six of 63 participants completed the Preserve@Home program. Most students will share this information with family, friends and community groups thus spreading the impact even further. Another 26 completed an on-line class of Preserve@Home with a score of 80% or higher.

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

- Economy
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Other (Interest, Cost, Extension awareness)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

A retrospective pre-post survey was given to Preserve@Home participants: Eighty-six percent of participants took the classes to be in control of their food, 64% to save money, 86% to be more self-sufficient, and 79% to better use the produce they grew.

Key Items of Evaluation

As a result of taking Preserve@Home, the following changes were observed via a post class survey:

Use up-to-date tested, resource-based recipes and recommendations when canning foods - 71% learned, 79% did not do before, 100% will do now.
Adjust processing time for altitude when using a boiling water canner - 57% learned, 64% did not do before, 100% will do now.
Adjust for altitude when pressure canning - 57% learned, 79% did not do before, 100% will do now.
Add acid when canning tomato products -50% learned, 50% did not do before, 86% will do now.
Vent pressure canner -79% learned, 79% did not do before, 100% will do now.
Follow the proper pressure canner cool down -79% learned, 79% did not do before, 100% will do now.
Process all high acid foods using to research-based recommendations -43% learned, 36% did not do before, 100% will do now.
Process all low acid foods in a pressure canner using to research-based recommendations -50% learned, 64% did not do before, 100% will do now.
Follow a tested, research-based salsa recipe and recommendations -86% learned, 86% did not do before, 93% will do now.

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%		30%	
131	Alternative Uses of Land	10%		0%	
132	Weather and Climate	5%		0%	
213	Weeds Affecting Plants	5%		40%	
215	Biological Control of Pests Affecting Plants	5%		30%	
216	Integrated Pest Management Systems	10%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	3.4	0.0	2.0	0.0
Actual Paid	4.3	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**
145141	0	117135	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
145141	0	117135	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
247739	0	940873	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 4,214 direct educational contacts through Extension and 265,000 indirect contacts. Team members published three articles in refereed journals, six peer reviewed multi-state Extension publications (PNW), and participated in projects funded by $85,491 in grants.
Forest Management programs are largely centered in the forest-rich Idaho Panhandle and Northcentral 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. It alternates between northern Idaho and eastern Washington locations. Other programs for forest owners included the Forestry Shortcourse and the Forest Owners Conference.
As part of the Idaho Forest Stewardship program, a cooperative effort with the Idaho Department of Lands (IDL) and many other partners, UI Extension provided a series of 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. The activities were designed to strengthen forest owners' ability to implement practices that improve forest health and growth.
The Idaho Master Forest Stewards program continues to work with forest owners to develop their skills and provide information and education in schools and at community events. The program is intended to improve the growth and health of Idaho forests through forestry education by trained and certified volunteers. Four one-day "core" sessions provide content on native understory plants, invasive species, riparian ecology, and adult and extension education methods. In return for their training, certified Idaho Master Forest Stewards provide at least 70 hours of volunteer service over 2 years.
Education for loggers included beginning Logger Education to Advance Professionalism (LEAP) courses in Coeur d'Alene and Moscow, certifying a new group of 52 loggers. LEAP certification for loggers features over 20 hours of training designed to increase loggers' understanding and skills related to forest ecology, silviculture, and water quality. The program is instructed by University of Idaho faculty, with additional presentations from IDL personnel on state forestry laws and insects and disease. LEAP update classes are required to maintain certification. In 2015, update classes were offered in six communities and reached 245 learners.
About 45 workshops and classes were delivered by Extension Forest Management team members and drew 1,538 learners to study topics including invasive species, salvage logging (after fire), forest management planning, insect and disease management, tree planting, water quality, stream restoration, and applications of technology for mapping and positioning.
Important work by Extension Natural Resources faculty occurred as part of committees and councils. Our faculty attended 45 committee and council meetings in 2015. Notable among these were more than a dozen meetings of a multi-agency fire recovery task force (responding to a very severe fire season) and 12

meetings with a regional development leadership effort (Clearwater Basin Coalition).
The Forest Management Team continued to write articles for several trade publications and for the Idaho Forests website. Team members also contributed to the eXtension Community of Practice (CoP) on Climate, Forests, and Woodlands. Panhandle forest owners can choose from a wide variety of forestry Extension publications available through local UI Extension offices. Extension videos cover topics such as water quality, "selective" logging, and forest tax management. Other offerings include archived Woodland Notes articles, a database of consulting foresters, links to relevant websites, and a variety of other useful information on the UI Extension Forestry Website, which is maintained by Extension forestry staff on the UI Moscow campus. In addition, Extension faculty revised and re-released "After the Burn: Assessing and Managing Your Forestland after a Wildfire," a much needed publication following Idaho's many wildfires in 2015.

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, Master Gardeners, Extension faculty and educators, teachers, and youth. Expansion of audiences for 2015 include green industry professionals, residents of Idaho's wildland/urban interface, Master Forest Stewards, and Master Water Stewards.

3. How was eXtension used?

Team members contributed to the eXtension CoP in Climate, Forests, and Woodlands.

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	3906	262555	308	2445

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

Patent Applications Submitted

Year:	2015
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	6	3	9

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of workshops, field days, etc.

Year	Actual
2015	64

Output #2

Output Measure

- Number of participants in workshops, field days, etc.

Year	Actual
2015	2805

Output #3

Output Measure

- Number of articles in popular and trade press.

Year	Actual
2015	14

Output #4

Output Measure

- Number of hits on UI Extension Forestry website, YouTube videos; number of likes on UI Extension Forestry Facebook page; number of webinar attendees.

Year	Actual
2015	22889

Output #5

Output Measure

- Continuing Education hours for foresters, loggers, & other natural resource Professionals.

Year	Actual
2015	4687

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Other scientists are aware of our research findings. I: Number of refereed scientific journal articles.
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	Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased job skills and maintained certification requirements. Numbers of participants indicating they will adopt various specific recommended practices.
4	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.). Numbers of programs.
5	Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased job skills and maintained certification requirements. Numbers of Idaho loggers gaining or maintaining enrollment in the Idaho Pro-logger program.
6	Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased job skills and maintained certification requirements. Numbers of foresters gaining or maintaining enrollment in the SAF Certified Forester program.
7	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. Numbers of participants that have indicated they will take greater advantage of economic opportunities related to forests.
8	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. Numbers of participants indicating they will adopt various specific recommended forest management practices.

Outcome #1

1. Outcome Measures

O: Other scientists are aware of our research findings. I: Number of refereed scientific journal articles.

Not Reporting on this Outcome Measure

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.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased job skills and maintained certification requirements. 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
2015	493

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 and to maintain logger contractor employment. UI Extension is uniquely situated to provide local continuing education opportunities for field foresters, loggers, and other professionals engaged in forest systems including realtors and local decision makers. Continuing education is important because forest health and productivity can be affected by insect and disease problems. K-12 students also benefit when their teachers integrate research-based forestry education into their classrooms.

What has been done
Research on methods for creating biofuel from forest residuals (i.e., slash piles) is ongoing. Continuing education for natural resource professionals included workshops on thinning and pruning, tree planting, forest economics, log scaling, culvert and bridge design, wood pellet utilization, forest health, LEAP, and LEAP update. Insect and disease diagnosis and control recommendations were delivered through classes and one-on-one through the tree clinic. These efforts reached 27 forest professionals from universities, state agencies, consultants, and local businesses. The Forestry Shortcourse provided continuing education and University of Idaho credit to K-12 teachers, helping them integrate forest science into their classrooms.

Results
UI Extension forestry programs were attended by 227 foresters and other natural resource professionals in the Idaho Panhandle in 2014-15. Participants in the 2015 Family Forester?s Workshop indicated they gained knowledge in: cultural resources on family forests, forestland security and safety, managing forest nutrient needs, variable density thinning, aspen health and management, climate change options, fuel treatments and wildlife habitat, and family forest economics and policy. Logger education was provided through a program called LEAP Update, which informed loggers about log scaling, designing culverts and bridges, and wood pellet utilization. Almost all attendees ? 96% - said they would implement at least one of the LEAP practices.

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

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.). Numbers of programs.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual

2015	25

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Continuing education credits assist natural resource professionals with maintaining their employment.

What has been done
Four forestry workshops were held that offered some form of credits for maintaining certification in their profession. Twenty-one workshops were also offered in the Idaho Panhandle by Extension forestry programs.

Results
A total of 910 credit hours and 1,590 contact hours were generated from 25 forestry workshops.

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 #5

1. Outcome Measures

Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased job skills and maintained certification requirements. 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
2015	638

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Maintaining pro-logger accreditation is important for forest sustainability and logger employment.

What has been done
Nearly 1,500 loggers have attended the 44 LEAP sessions offered annually in the Idaho Panhandle since 1994. 112 loggers participated in 3 LEAP Update sessions held in the Idaho Panhandle in 2015. Also, 576 loggers are enrolled in the Idaho Pro-Logger program.

Results
Of the 112 loggers in the three LEAP Update sessions: 65 will apply silviculture to western hemlock; 94 will improve stream crossings; 61 will better assess logging costs; 105 will protect water quality during harvest operations; 108 will Improve communications while logging; and 35 will manufacture wood pellets. The Idaho Pro-Logger program trains loggers to apply better land stewardship. 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 #6

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	55

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
Four workshops were held that offered SAF Continuing Forestry Education (CFE) credits in 2015.

Results
Thirty five foresters took advantage of this opportunity, earning a total of 256 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 #7

1. Outcome Measures

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. 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
2015	40

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
Team members organized and participated in a number of community forest and regional efforts aimed to engender better land management for the increased ecological and economic health of the region. Various natural resource programs were offered that stress economic utilization of

rural landowners? natural resources.

Results
Over 90% of attendees of the various programs indicated that they would implement or would use the information provided on economic utilization.

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 #8

1. Outcome Measures

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. Numbers of participants indicating they will adopt various specific recommended forest management practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	2121

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Improving the management of non-industrial private forest land in Idaho is the major focus of this team. These forests make up a significant percentage of the state's forested landscapes and watersheds, and how they are managed has important implications for the health of the state's environment and its economy.

What has been done
Various workshops and publications were produced that communicate sound land stewardship principles to private landowners. Most programs are geared to the new or small-acreage non-

industrial private landowner.

Results
Over 90% of respondents indicated that they will adopt one or more practices or will use the information presented.

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

Brief Explanation

External factors, especially the 2015 wildfires, increased program participation and necessitated the unplanned delivery of multiple Extension programs, publications, and response to respond to the disaster in fire-affected communities.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

The 2015 fires are the biggest event for Extension forestry in the Clearwater region this year. The year was predicted to be a bad wildfire year, so Reducing Fire Risk in the Wildland-Urban Interface which was developed in 2013 (also predicted to be a bad wildfire year) was delivered at two locations in June. After the fires hit in August, Extension responded with the distribution of over 400 fire recovery information packets for rural landowners, a special edition of the fall newsletter on fire recovery (over 2600 landowner addressed mailed to), five agency assistance events in surrounding fire-affected communities that attracted over 160 landowners and over 60 agency folks and Idaho congressional delegation representatives. Two workshops were conducted on salvage logging and erosion control that attracted over 60 attendees, and led a multi-agency coordination effort for fire assessment and recovery that led to the creation of a region-wide fire recovery multi-agency group. Additional fire recovery workshops are already scheduled for the 2016 reporting year.

Key Items of Evaluation

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	20%		0%	
723	Hazards to Human Health and Safety	10%		10%	
724	Healthy Lifestyle	30%		25%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	0%		5%	
903	Communication, Education, and Information Delivery	0%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	6.5	0.0	2.0	0.0
Actual Paid	6.8	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**
195306	0	86537	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
195306	0	86537	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
642525	0	505900	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Health and Nutrition logged more than 800 individual teaching events and engagement activities in 2015. In total, these efforts reached more than 33,600 Idaho contacts. Team members published four articles in refereed journals, one peer reviewed multi-state Extension publication (PNW), and participated in projects funded by $286,735 in grants. Activities of this team are grouped into several projects described below.
Faculty working on the Healthy Lifestyles/physical activity project presented in 380 individual fitness classes and consultations reaching more than 12,000 contacts. Fitness events included classes like "Choose Health: Food, Fun, and Fitness" to help with obesity issues and making healthy choices. Additionally, 164 sessions of Strong Women were delivered for more than 1,750 contacts. Over 200 classes and workshops about nutrition (exclusive of the SNAP-Ed and EFNEP projects) provided information about healthy foods, MyPlate, etc., to more than nearly 9,900 contacts, including 4,400 youth. Sixty-one classes reached more than 2,600 youth and adults about preparing and cooking healthy foods including whole grains, fruits, and vegetables. Other activities included a nutrition and chronic disease project, Generating Rural Outcomes for Weight Healthy Kids and Communities, and Healthy Eating Active Living Mapping Attributes using Participatory Photographic Surveys. Venues for classes include teen conferences, youth camps, senior centers, farmers markets, and many others.
Eat Smart Idaho includes both of the Low-Income and Underserved Audience projects (EFNEP and SNAP-Ed) delivered through UI Extension. Eat Smart Idaho delivered hundreds of classes reaching more than 31,500 contacts in 36 counties. The 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 low-income and underserved individuals in 37 counties through three programs: 1) the Expanded Food and Nutrition Education Program (EFNEP), 2) the Supplemental Nutrition Assistance Program Education (SNAP-Ed), and 3) the Senior Extension Nutrition Program (SENP). EFNEP and SNAP-Ed (both funded through USDA) mainly targets low income adults and youth including those receiving SNAP benefits or attending schools with more than 50% of students eligible for free and reduced-price school lunch. SENP (funded through the Area Agency on Aging) targets seniors at high-nutritional risk, most of whom are low-income or vulnerable.
The target audience for the Nutrition and Chronic Disease program includes those interested in learning how to manage or prevent type 2 diabetes, cardiovascular disease, and osteoporosis. The target audience for the Healthy Lifestyles program includes adult and youth who have poor nutritional habits, are inactive, overweight or obese, and adults who are role models for youth and others. Other audiences include Extension faculty and postsecondary students in nutrition classes.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	18096	118504	47060	5795

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

Patent Applications Submitted

Year:	2015
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	1	7	8

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Develop Extension publications that can be used in the Eat Smart Idaho project or the Healthy Living Project.

Year	Actual
2015	7

Output #2

Output Measure

- Submit a journal article based on research conducted in either the Eat Smart Idaho or Healthy Living project.

Year	Actual
2015	6

Output #3

Output Measure

- The number of youth who attend health and nutrition educational events

Year	Actual
2015	29710

Output #4

Output Measure

- The number of adults who attend health and nutrition educational events

Year	Actual
2015	7231

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Adult Eat Smart Idaho participants will improve their diets after completing the Eating Smart Being Active course. I: 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	Participants in the Healthy Habits online course will improve their eating habits. Number of adult Healthy Habits participants who consume more fruits, vegetables, whole grains, or low-fat dairy products.

Outcome #1

1. Outcome Measures

Adult Eat Smart Idaho participants will improve their diets after completing the Eating Smart Being Active course. I: 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
2015	1129

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Nutrition education is critical for limited income individuals. There is evidence that consumption of certain food types can delay or prevent diet related conditions. In fact, eating the recommended number of fruits and vegetables, low fat dairy, whole grains and being physically active 150 minutes or more per week are healthy habits that can decrease incidence of chronic diseases (heart disease, certain cancers, and obesity) which, in turn, may help drive down health care costs.

What has been done
Eat Smart Idaho in District III reached 1,265 adults with a series of lessons on Healthy Eating. Food Behavior checklists were completed as well as 24 Hour recalls with EFNEP individuals. Also, a separate series of classes was offered to low-income families and individuals at partnering agencies and locations.

Results
By improving shopping and meal planning skills, healthy eating habits, and motivation to be physical active, Eat Smart Idaho improves food security and reduces risks for diet-related diseases. Research shows that adults who complete a series of four basic Eat Smart Idaho classes measurably improve their eating and physical activity behavior. Also, SNAP eligibles who attended a class on fruits and vegetables, whole grains, low-fat dairy and physical activity reported an increase in consumption of fruits and vegetables, whole grains, low-fat dairy, or an increase in physical activity.

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 Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Food texture is one of the most important factors in consumer food choices. This is especially true in the selection of reduced and fat-free products: the ideal reduced-fat product has a texture identical to the full-fat project, but a lower fat content. Unfortunately, many lower-fat products do not have the same texture as, and are considered less desirable than, their full-fat counterparts. Consequently, there has been much effort into developing low-energy, nutritionally dense foods that are considered palatable to consumers. It is especially desirable to produce palatable, low-energy foods to address health concerns.

What has been done
Rheology, tribological, and sensory analyses have been used to evaluate food texture and mechanical/friction behavior. While rheology and sensory test have been used for over 50 years, tribology, the study of lubrication between sliding surfaces, has only recently been used to evaluate food frictional behavior. This research project focuses on improving the understanding of how perceived food texture is related to rheological and tribological behavior. A graduate student working under the project directors supervision, has received research training and manuscript preparation skills from this work.

Results
There have been several accomplishments for this work. First, the structural features and rheological behavior of mashed potatoes prepared from different forms (e.g., raw potato, instant potato flakes) were evaluated. Links were found between potato structural features and

rheological properties. These data have been published in the Journal of Food Engineering. Next, the physiochemical and rheological properties of a polysaccharide extracted from Alyssum homolocarpum seeds were evaluated. Knowledge of these behaviors allows a more fundamental approach for using this polysaccharide in food, cosmetic, and pharmaceutical applications. Finally, the physiochemical properties, microstructures, rheological behaviors, and stability of concentrated emulsions (containing >40% oil) prepared with several different stabilizing agents (gum arabic, fish gelatin) were evaluated. These emulsions can be formulated to remain stable over a period of several weeks. In addition, links were found between physiochemical, structural, and rheological behavior. These emulsions are hypothesized to be a suitable fat replacer for milkfat in cheese.

4. Associated Knowledge Areas

KA Code	Knowledge Area
502	New and Improved Food Products

Outcome #3

1. Outcome Measures

Participants in the Healthy Habits online course will improve their eating habits. Number of adult Healthy Habits participants 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
2015	77

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Healthy Habits online course is designed to increase consumer knowledge as an alternative way to learn reputable nutrition information as opposed to in-person classes.

What has been done
An 8 week functional foods email class was sent to 77 participants.

Results
Although impacts were not evaluated at this time, one participant stated that she was pleased with the information and it was helpful for her food choices.

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

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
- Other (Time limitations, cost of programming, extension awareness)

Brief Explanation

Other competing options for education and time constraints certainly can influence participation.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Eat Smart Idaho, SNAP-Ed: FY2015 Idaho SNAP-Ed goals focused on changing adult and youth behavior after audiences gained new knowledge through a series of classes about food quality and physical activity. UI SNAP-Ed was successful in positively changing adult and youth dietary and physical activity behaviors. SNAP-Ed participants reported an increase in consumption of fruits and vegetables, whole grains, and low-fat dairy and also reported an increase in physical activity behaviors. By improving diet quality, food resource management, and food safety behaviors, Eat Smart Idaho saved $14.55 in future health care costs for every $1.00 invested in healthy living education. UI SNAP-Ed also experienced increased learning opportunities about how to supplement the impact on individual behavior through social environmental interventions. Collaborating on new projects and participation in multiple allied organizations provided new learning connections.

Key Items of Evaluation

One of the team members worked with an adult female for the past year in a one-to-one and class environment. She is in her early 50's and when they started working together she was approximately 75lbs. overweight and had never been involved in a continuous fitness/healthy lifestyle program to date. She felt unsure and intimidated walking into a fitness center or class, and did not feel comfortable signing up to participate on her own. The initial meetings consisted mainly of nutrition and healthy lifestyle consultations, and then she signed up to be involved in a fitness class and personal fitness consultations. She

has stayed motivated throughout the year, and has encouraged her husband and adolescent daughter to be involved in their own healthy pursuits. She has lost considerable weight, and clothes sizes, but most importantly has increased her self-esteem, and overall health in additional areas of her life. She and her family have been wonderful role models in the community, and her current motivation is to want her family to be healthy which will help influence others as well.

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: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	4.3	0.0	9.0	0.0
Actual Paid	6.3	0.0	8.0	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**
268458	0	445744	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
268458	0	445744	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
296141	0	3615022	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 32,011 direct educational contacts through Extension and 289,996 indirect contacts. Team members published two articles in refereed journals, five peer reviewed multi-state Extension publications (PNW), and participated in projects funded by $446,068 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 composting, air quality, cover crops and cropping systems, manure and native soils, floating wetlands, soil analyses, and humic acid research. 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 and green manures, water quality monitoring, on-farm composting, manure application, recycling, reduced power consumption and use efficiency, Low Elevation Spray Application irrigation technology, and native shrub gardens. One faculty member organized an aquaculture tour to educate Idaho Department of Environmental Quality personnel about Idaho's aquaculture operations as they get ready to approve a National Pollutant Discharge Elimination System program through the EPA.
Consultations included soil analyses and surveys for disease and pest issues that reached nearly 1,300 individual stakeholders, including industry representatives, watershed advisory groups, individuals, Idaho Department of Environmental quality, and local government. Over 100 presentations were delivered at workshops, conferences, and events, providing education to thousands adult learners on industry-critical topics as well as those topics that are relevant to communities and to individual stakeholders. Eighty-two presentations for youth audiences reached 4,700 learners about topics related to water quality and ecosystem integrity.
In collaboration with the Idaho State Department of Agriculture, a faculty member secured funding from the USDA-NIFA Extension IPM program to support development and updates of pesticide safety education manuals. A NRCS-CIG project related to pest identification and management was also completed. In addition, pesticide certification and re-certification classes reached 877 learners.
The IDAH2O program was delivered through 10 workshops reaching 137 stakeholders and resulted in a new cohort of IDAH2O Master Water Steward volunteers who are working with watershed-scale research and monitoring programs. Other activities included a 4-H Urban Interface program and Experiential Science Training for K-12 teachers.
Faculty participated in a range of multistate activities including aquaculture education, participation in the Western Regional Aquaculture Center, and attending and presenting at many conferences, workshops, and field days.

2. Brief description of the target audience

• The public affected by water and waste management issues provide input and feedback about programs and participate in educational programs, including homeowners, students, and realtors
• Small landowners (including but not limited to: recreational properties, small tracts of forest land, seasonal lake homes, etc.).
• Producers, processors, professional applicators, and industry representatives and professional consultants affected by waste management issues.
• Natural Resource Professionals.
• Local and/or state officials who either develop or implement rules and regulations related to environmental quality.
• State and federal agencies personnel.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	26492	286862	5519	3134

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

Patent Applications Submitted

Year:	2015
Actual:	1

Patents listed
PCT/US2014/066677, 11/20/2015, Biochar Water Treatment

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	5	18	23

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Educational workshops, seminars and presentations to producer groups: number of events.

Year	Actual
2015	84

Output #2

Output Measure

- Applied and basic laboratory and field research experiments, number of projects

Year	Actual
2015	29

Output #3

Output Measure

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

Year	Actual
2015	30

Output #4

Output Measure

- Tours and Field Days

Year	Actual
2015	14

Output #5

Output Measure

- Professional presentations; number of invited and volunteer papers presented.

Year	Actual
2015	59

Output #6

Output Measure

- CCA credits offered for participation in courses; number of credits offered.

Year	Actual

2015 22

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Participants use best practices for water, pesticide, nutrient, or waste management. I: Number of program participants indicating adoption of recommended practices (follow-up survey data) or indicating intention to adopt recommended practices (post-program questionnaire)
2	Producers are aware of issues and knowledgeable of practices that affect the environmental and economic sustainability of crop production. I: Number of participants reporting that their knowledge had been increased because of their participation in program.
3	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	Clean water is central to public health, environmental quality and the economic well-being of the United States.
5	Develop landscape-attribute-based models that predict the occurrence of volcanic ash mantles that have undergone podzolization.

Outcome #1

1. Outcome Measures

Participants use best practices for water, pesticide, nutrient, or waste management. I: 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

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	335

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Pesticide resistance causes poor weed control, in turn causing an increase in pesticide applications and rate, which may be harmful to soil and water resources. Also, the placement of center pivot spray nozzles in the LESA configuration (in canopy about 1 foot above the ground) has been demonstrated to save water and power.

What has been done
A PowerPoint presentation was developed for a one hour pesticide credit on managing herbicides to avoid resistance and excessive applications. A post class survey was used at two classes and 73% of the 126 attendees and 98% of 43 said they determine the herbicide Mode of Action (MOA) classification before selecting a pesticide to spray. Also, in demonstrating the LESA center pivot configuration, many presentations and 4 field day demonstrations in Idaho and Nevada have been held in the last 2 years. Side-by-side field-scale demonstrations of a span of LESA and original sprinkler arrangement were installed at one NV location and 6 ID locations, with water and energy savings measured at each site.

Results
By rotating herbicide MOA's, the herbicides will be much more effective and less herbicide will be used. This will reduce the impacts to soil and water quality. The results of the LESA center pivot configuration included at a minimum, cooperators at each site plan to convert the entire pivot to LESA following the year of demonstration. Three Idaho cooperators installed LESA on multiple additional pivots this year or plan to for next year. Interest from other farmers is high, the potential to save significant energy and water as the technology is further adopted.

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

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	225

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Composting and vermicomposting are two waste management practices that can be used at the farm or at the urban/community level to recycle organic waste, including manures and food waste. Also, there is a need to increase awareness of pesticide stewardship and use of integrated pest management (IPM) to help reduce impacts to soil and water.

What has been done
Classes on composting and vermicomposting were offered to farmers, gardeners, and others to increase their knowledge of these topics and to increase the applicability of them on a real basis. Also, a pesticide stewardship post class survey was conducted at one recertification workshop.

98% of the 126 class participants indicated that they increased their knowledge of pesticide use and stewardship.

Results
Participants increased their knowledge on composting and vermicomposting. Many expressed interest in starting those practices at their farm or home, while others expressed interest in trying new learned techniques. The pesticide workshop survey also indicated that the increased knowledge would be useful to their work. From this, it can be concluded that they will use the new knowledge to increase pesticide stewardship practices, thus reducing impacts to soil and water quality.

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

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 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Realtor course about BMPs was delivered since much misinformation exists among realtors and rural homebuyers new to Idaho. Water related permitting processes are misunderstood.

What has been done
The team collaboratively developed and taught REALTOR (6-credits of professional development) course about the science behind water quality protection permitting processes, such as septic systems, riparian buffers, soil erosion, setbacks, etc.

Results
Every response answered "Yes" to "Because of participating in the class, do you feel more confident in answering questions from your clients about related information?" 100% answered "Yes" to "Because of participating in the class, do you feel more confident in providing related information to your clients without them asking?"

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
132	Weather and Climate
405	Drainage and Irrigation Systems and Facilities

Outcome #4

1. Outcome Measures

Clean water is central to public health, environmental quality and the economic well-being of the United States.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Total freshwater and saline-water withdrawls for 2010 were estimated to be 355 billion gallons per day, with 46 billion gallons per day for domestic use, 21 billion gallons per day for industrial and

mining use, 126 billion gallons per day for use in agriculture and 161 billion gallons per day for thermoelectric power plants. In 2014, 40-50 state water managers expected water shortages the next 10 years. The U.S. west and southwest continues in a pattern of widespread drought of historic proportions.

What has been done
We have accelerated the capacity of the U.S. to meet near-term and future water needs by executing a design build of a novel, patent pending wastewater treatment technology.

Results
The newly developed scalable water treatment technology advances water reuse and recycling, bioenergy and carbon sequestration, as well as nutrient recovery and aquatic pollution mitigation.

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation

Outcome #5

1. Outcome Measures

Develop landscape-attribute-based models that predict the occurrence of volcanic ash mantles that have undergone podzolization.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Soils formed in higher-elevation volcanic ash-influenced terrain of northern Idaho and northeastern Washington have a much different root-zone environment than do the other geographically associated soils of the region. Most of the area in which these soils occur is part of the U.S. National Forest system and has not been subject to detailed soil investigation or mapping. Models will be sued to generate digital layers that will be used to supplement and improve existing soil survey information. Efforts to incorporate these National Forest soil inventories into the National Soil Information System and Web Soil Survey have been initiated, a better understanding of the extent of these soils is clearly needed to ensure the quality and completeness of the National Soil Survey database.

What has been done
A research project for a master student was developed to help predict the occurrence of podzolized (acidic) soils in the Northern Rocky Mountains. The student conducted field research characterizing associations between podzolized soils and forest plant community composition and structure at 50 sites. Detailed vegetation data were collected and will be analyzed along with selected soil chemical properties - pH, exchangeable aluminum, secondary iron and aluminum, and organic carbon.

Results
31 soil samples have been entered into the National Cooperative Soil Survey database. Data from these soils are now available to scientists and the general public.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources

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

Brief Explanation

The 2014 Idaho Legislature directed the Department of Environmental Quality to seek approval of a National Pollutant Discharge Elimination System (NPDES) program from the Environmental Protection Agency. Idaho is one of 3 or 4 states that does not have primacy; i.e., EPA runs the discharge permit program for the state. DEQ initiated negotiated rulemaking in December 2014. Every month from December 2014 through July 2015, DEQ conducted monthly web-based meetings at its regional offices. The Idaho aquaculture industry was concerned about the proposed application and permit fees. Under the EPA there are no fees for the discharge permits. DEQ decided to waive the application and annual fee for aquaculture in the proposed rule. Estimated cost savings for the aquaculture permittees are about $214,800 per year for permit fees and $141,000 to $282,000 for the application fees. The proposed rule will be presented to the 2016 Idaho Legislature for their consideration.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Kootenai County wants to eliminate shoreline protection buffer zones. Additional resources were placed into educating the public and elected officials about the importance of riparian buffer zones. Through extensive consultation with the widest possible range of agencies and organizations, including lakeshore owners groups, tribes, state and federal governmental agencies, a broad swath of the University of Idaho, and individuals, a focused set of educational objectives was developed, centered on three key aspects: stormwater

pollution, understanding BMPs within the larger context of watershed processes, and citizen science water quality data collection.
IDAH2O: When asked about "knowledge of water quality before this workshop" vs. "... after the workshop", on a scale from 1-5, the average score increased from 2.75 to 4.14.

Key Items of Evaluation

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: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	4.7	0.0	11.0	0.0
Actual Paid	1.9	0.0	9.0	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**
131458	0	281798	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
131458	0	281798	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
72140	0	4872299	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Members of the Potato Team reported 5,850 direct educational contacts through Extension programs and 68,939 indirect contacts. Team members published 6 articles in refereed journals and one peer-reviewed Extension publication, and participated in projects funded by $3,237,159 in grants. Through consultation with individuals and small groups, they reached 185 individual learner contacts, including growers and industry representatives.
The Potato 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 potato production and storage. Members of the Team include disease and insect experts, fertility, irrigation, and harvesting experts, and storage and marketing experts. Team members meet regularly and otherwise collaborate with industry associations and the Idaho Potato Commission to understand needs of stakeholders.
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, nematodes, organic herbicides, potato psyllids, potato virus Y, aphids, wireworms, and Colorado potato beetles, and potato germplasm. Ongoing work includes field and greenhouse experiments to understand the ecology and treatment options for serious potato pests in the field and in storage, nutrient management questions, and the value of various soil amendments. For example, team members gathered applied field research data on nutrient management, water-mark sensors, and nitrogen mineralization data to develop comprehensive fertilizer guides for proper nutrient management. Field demonstrations help growers and other stakeholders understand the impact of various planting and pest management practices and irrigation needs and strategies.
Technical information was disseminated through county faculty, educational seminars, workshops, conferences, news releases, field and storage visits, phone calls, newspaper, trade journal and 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 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 and classes and numerous field days and tours. Extension's Potato School reached 176 learners, and field days and tours reached 643 learner contacts. Dozens of workshops and articles in trade publications, presented or written by UI faculty, brought information to the industry about topics such as potato bruising and storage, fertilizer requirements, pathogens and disease control, and many more. Much of the Extension faculty's work is made possible through collaborations and participation on various citizen and professional alliances concerned with

environmental quality and agricultural sustainability.
Additionally, during this timeframe there were 4 potato plant variety patents applied for ('Mountain Gem Russet', 'Targhee Russet', 'Northwest Norkotah 285' and 'Northwest Norkotah 90').

2. Brief description of the target audience

Target audiences include potato producers and processors, seed producers, field agronomists, consultants, industry and agency representatives, consultants, members of the Idaho Potato Commission and the Northwest Potato Research Consortium, and other researchers and Extension specialists.

3. How was eXtension used?

eXtension was not reported in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	5850	68939	11	135

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

Patent Applications Submitted

Year:	2015
Actual:	4

Patents listed
'Mountain Gem Russet' potato - PVP# 201500493 (9/9/2015)
'Targhee Russet' potato - PVP# 201500382 (8/18/2015)
'Northwest Norkotah 285' potato - PVP# 201500352 (6/29/2015)
'Northwest Norkotah 90' potato - PVP# 201500325 (5/11/2015)

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	1	6	7

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Seminars, workshops, field day presentations.

Year	Actual
2015	72

Output #2

Output Measure

- Trade Journal Articles.

Year	Actual
2015	18

Output #3

Output Measure

- Field Days.

Year	Actual
2015	11

Output #4

Output Measure

- Individual Consultations.

Year	Actual
2015	255

Output #5

Output Measure

- Graduate Students.

Year	Actual
2015	5

Output #6

Output Measure

- Workshops conducted.

Year	Actual
2015	20

Output #7

Output Measure

- Email Information Dissemination.

Year	Actual
2015	4195

Output #8

Output Measure

- Potato costs and return estimates
  Not reporting on this Output for this Annual Report

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

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	85

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Late blight affected many growers in the eastern and central part of the state in 2015. Recommendations were needed on vine kill and storage management. Proper diagnosis of the disease was necessary for many to instigate management recommendations.

What has been done
Faculty presented two separate workshops around the state on late blight. Approximately 200 people attended the two meetings. The presentations were disseminated to 500 growers via the Idaho Potato Commission, and many phone calls and emails were answered on the subject. Testimonials indicated a majority of the growing operations in the affected area used phosphorous acid going into storage.

Results
Industry personnel feedback indicated at least 30 growing operations followed the recommendations outlined in the checklist newsletter. Growers with samples of suspected late blight were provided rapid diagnostics to determine if their samples were diseased. Any grower bringing in diseased samples was provided information on how to manage late blight.

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

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	31

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Commercial growers as well as fresh and processed potato buyers are concerned about disease and pests issues in both raw and finished product. Insect pest management depends upon timely, accurate identification of target pests. Growers were faced with an array of pests and diseases during the 2015 growing season, including early blight, white mold, late blight, and aerial stem rot.

What has been done
Pest and disease alerts were posted on the potato pathology twitter account Idaho Potato Diseases at @potatodiseases with links to information on how to manage disease problems. Potato psyllids were monitored across the state, and updates on results of monitoring program were disseminated to stakeholders weekly. Also, a weekly disease update was published on diseases being found in Idaho for the previous week. This was published on the PNW Pest Alert website which has a subscription list of approximately 1500.

Results
Speedy dissemination of information on disease outbreaks have allowed growers to make better management decisions, such as application of additional protective sprays or delaying or even preventing the application of pesticides. Growers and crop consultants reported that these 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

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	230

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Dickeya, a new disease to Idaho, was initially identified in research plots. Dickeya can cause significant quality reduction in commercial potatoes due to decay that occurs with infection. This causes packing and storage management issues. Another issue is the importance of Zebra Chip development during storage. Initially it was thought that disease progress happens only in the field. Study results suggests the opposite. Understanding factors that can promote pathogen development would help growers to limit damages.

What has been done
Information was provided to the potato industry via newsletter, emails, phone calls and face to face contact. The Team is a source of information and sample identification for a novel disease that the industry lacks experience handling. Also, workshops for potato growers were given at farms and fieldworkers luncheons and an irrigation workshop was given with Idaho Power. The new website has several publications that are easily available. A detailed storage study on Zebra Chip was conducted with out-of-state collaborators.

Results
Industry is aware of the issue with this new disease, Dickeya, and is actively looking for samples and how it behaves in our environment. Also, those attending the Educators workshops expressed an increase in their knowledge and skills. The educator got several requests for the proceedings.

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.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The cost of potato production affects herbicide choices. Also, the drought in the western states has affected the quality of harvested and stored crop. In addition, the price of potatoes affected adoption of some practices due to restriction in operating funds.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

A grower with over 2000 acres of potatoes in Idaho and Washington was not controlling herbicide resistant Russian thistle. The same herbicide program was being used for almost all the potato fields. The educator was able to teach the grower and agronomist about development of herbicide resistant weed populations, effective herbicides with mechanism of action different than the herbicide to which the Russian thistle populations were resistant, and understand that an herbicide program should be developed for individual fields, not the same program for all fields. The grower was able to save money by dropping

2 to 3 herbicides not needed for most fields and improved Russian thistle control from less than 50% to more than 80% season-long.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 13

1. Name of the Planned Program

Global Food Security and Hunger: Small Acreages and Emerging Specialty 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	15%		0%	
111	Conservation and Efficient Use of Water	10%		0%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		30%	
202	Plant Genetic Resources	5%		0%	
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	20%		0%	
602	Business Management, Finance, and Taxation	10%		0%	
604	Marketing and Distribution Practices	20%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	2.4	0.0	1.5	0.0
Actual Paid	4.4	0.0	1.6	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**
66364	0	44967	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
66364	0	44967	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
201234	0	884406	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Small Farms and Community Systems team members reported 10,167 direct educational contacts through Extension and 74,965 indirect contacts, and participated in projects funded by $1,200,577 in grants. Successful grant proposals in 2015 included funding from the USDA-NIFA Beginning Farmer Rancher Development Program and the USDA Farmers Market Promotion Program.
The Small Acreages and Emerging Specialty Crops team delivered a variety of intensive educational programs. Efforts to address the sustainable use of lands and natural resources included the 8-week "Living on the Land" course. The "Cultivating Success" course was delivered in 2015, but team members also updated the curriculum and planned an expansion that will launch in 2016. Individual workshops and workshop series were delivered for clientele on a wide variety of topics including marketing, enterprise development, funding a small farm business, biocontrol, investing in food systems, pesticide recertification, use of native plants, water conservation landscaping, and grant writing.
Consultations with individuals or small groups, reached 1,296 individual learner contacts and covered topics such as community gardens, farm to fork demonstrations, and interpretation of soils. Workshops, presentations, classes and field days reached nearly 1,900 learners contacts and included topics such as beneficial insects, landscaping, investing in food systems, pesticide recertification, grant writing, use of native plants, and water conservation landscaping. Educational events for small acreage farmers and ranchers were delivered through several conferences including the Idaho Ag Summit and the Women in Ag conference and as individual workshops covering topics such as sustainable animal and vegetable production, permaculture, and producer-school connections.
Along with the Idaho State Department of Agriculture, Extension organized and facilitated workshops for Farm to School activities. One team member served on the Idaho Farm to School Advisory board and the Idaho State Department of Agriculture's Food Safety and Modernization Act Advisory Board.
The small farms, horticulture, and nutrition education teams continue to work together to deliver programs that intersect local food systems, community vitality, and nutrition and health. Team members collaborate in community food system/food hub projects, including the One Sky One Earth Food Coalition, and the Palouse Clearwater Food Coalition. They are also making plans to develop a regional food network. Some members work with community advocates to evaluate food systems and investigate potential for food hubs. Others worked with communities to invest in local food systems as a way to help end hunger and food insecurity. Food security issues were addressed through small farms team members' participation in the Idaho Hunger Summit 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

Target Audiences
The primary target audience includes established and prospective small-acreage, 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, learn more about organic production and eco-labeling, and are interested in learning more about rural issues. Additional target audiences include local food groups, consumers of local foods, farmer's market shoppers, Master Gardeners, local nonprofits, community leaders, and Extension educators.
Underserved Audiences
Provide resources for people with small acreages who wish to start, continue, or expand specialty horticultural enterprises. Women farmers and limited resource farmers are often in this group. There is also the potential to reach Hispanic and Asian farming audiences.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	9140	72940	1027	2025

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

Patent Applications Submitted

Year:	2015
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Small Farms / Marketing Conferences

Year	Actual
2015	2

Output #2

Output Measure

- Small Acreage Farming Course

Year	Actual
2015	7

Output #3

Output Measure

- Small Acreage Business Planning / Entrepreneurship Courses.

Year	Actual
2015	2

Output #4

Output Measure

- Land Stewardship courses.

Year	Actual
2015	7

Output #5

Output Measure

- Tours, Demonstrations and Field Days

Year	Actual
2015	10

Output #6

Output Measure

- Farmers Market workshop with ISDA
  Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Workshops and Shortcourses

Year	Actual
2015	18

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. I: 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 participating in University of Idaho Extension programming. I: 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. I: 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. I: 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. I: 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	Identify ways of increasing production for apple growers.

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. I: 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

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	424

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Living on the Land participants are first time acreage owners who do not have any experience managing a farm. Irrigation, weeds, pasture management, and other tasks can be overwhelming for them leading to undue costs, environmental damage, and loss of productivity. For the Goat Enterprise budgeting workshop there is speculation that a large goat creamery may move into the area. Budgeting was taught to help producers proceed with caution and not take on too much risk.

What has been done
A Living on the Land course was offered with six 2.5 hour sessions taught by Extension educators. Also, a goat enterprise workshop was created in partnership with FSA and ISDA.

Results
An average of 8 attendees came to each of the 6 courses offered in Living on the Land. A total of 80 people were taught goat enterprise budgeting through the local workshop and a national conference.

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 participating in University of Idaho Extension programming. I: 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

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	82

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Incorporating Best Management Practices helps landowners create sustainable and productive land which is necessary to increase environmental health and food production value. Identification and management for increased populations of pollinators and beneficial insects are critical to many small acreage fruit and vegetable producers.

What has been done
An intensive workshop was held with WSU & UI entomologist, agency resource professionals, and experienced farmers demonstrating both identification and practical applications of increasing the presence of pollinators and beneficial insects on the farm.

Results
All 39 of the producers who attended indicated they gained new knowledge about how to identify beneficial and pollinators; 38 indicated they learned about native and non-native plantings for insect conservation on their farms. Thirty-eight (38) also said they would adopt one or more practices that were described in the workshop.

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. I: 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 Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Small farms that are sustainable tend to protect their natural resources while being also economically viable and socially just. Beginning growers often model the practices of their peers. Classes from this topic team focus on teaching people to protect their natural resources and run successful small farm businesses. Having students who implement those practices and are able to demonstrate and share what they have learned to beginning farmers is one positive indicator of success.

What has been done
One former student helped teach a section of the Beneficial Insects and pollinators class. She has planted numerous native plants as insectaries for beneficial insects on her farm. Both this farmer and another former student hosted farm tours as a follow-up to the workshop.

Results
Two former course attendees have adopted practices learned through extension courses, are achieving success in small farm business, and now sharing with others.

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. I: 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
2015	127

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Much of the nation?s land base is privately owned by individuals. Helping these people manage their land for economic, social, and ecological benefits is a value to both landowners and society. Specifically, conservation on land is critical for preventing loss of soil and conservation of water.

What has been done
Home landscaping students stated that they would implement at least one conservation idea from the course including seed saving, irrigation system, native plant selection, and more.

Results
Three landowners on 27 acres are implementing some new conservation measure due to Extension consultation.

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. I: 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
2015	13

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Marketing locally grown agricultural products is a way of improving rural economies, creating new community involvement and networks, and providing fresh, wholesome food products.

What has been done
The three week Small Farms and Community Food Systems workshop series has attracted a sustained audience over the years with people interested in growing food for local consumption and increased income from their land.

Results
It is estimated conservatively, that at least half a dozen of the past year's attendees of these programs have sold food produced on their land to local markets.

4. Associated Knowledge Areas

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

Outcome #7

1. Outcome Measures

Identify ways of increasing production for apple growers.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In order to stay competitive in the highly subsidized world apple market, U.S. apple growers need to maximize limited land resources while increasing production and maintaining quality. By more efficient land use, varying tree orchard architectures, and developing highly efficient rootstocks sustainable output/input ratios can be reached.

What has been done
We have studied the influence of rootstocks and orchard architectures on different characteristics of Aztec Fuji apples, including tree growth, nutrients, fruit size, color, soluble solids concentration, starch index, firmness, internal ethylene, respiration, and physiological disorders at harvest and after storage.

Results
Aztec Fuji apples trees were planted and results have been extremely successful. Trees with tall spindle training produce higher yield and large fruit with superior quality as compared to those produced under conventional systems. Some rootstocks are performing exceptionally well under the climatic conditions of Southwest Idaho and the Fuji apple produced in Idaho had the largest size and yield compared to those in other states.

4. Associated Knowledge Areas

KA Code	Knowledge Area
201	Plant Genome, Genetics, and Genetic Mechanisms

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
- Public Policy changes
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

An Idaho Cottage Food bill was submitted to the state legislature this year but failed to pass. It was a contentious issue among farmers as some wanted the regulations for food safety and to allow them more freedom to develop their value-added food products. Others believed they had more freedom in their health district than the new rules would allow. It brought to the forefront some inconsistencies in Idaho's Health district interpretations of the Idaho Food Code and also helped farmers learn more about what the rules actually were.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

The Idaho Farmers' Market Association grew out of an Idaho Summit on Hunger and Food Insecurity conference action plan several years ago. Since that time, Volunteers in Service to America (VISTA) volunteers, a dedicated board of directors, and technical advisers have worked together to grow the organization to the point that it could serve as a voice, an educational resource, and a source of networking and sharing among Farmers' Market managers and vendors across the state. Extension has been a partner from the very beginning.

This year, the association had grown to the point that it could apply for a federal grant to support the development of a number of educational resources and events to benefit all of Idaho's Farmers' Markets.

The Idaho Farmers' Market Association was awarded close to $91,000 from USDA this year. As the educational partner, University of Idaho Extension will be taking a major role in the creation and delivery of these educational resources.

Key Items of Evaluation

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%		0%	
202	Plant Genetic Resources	10%		0%	
204	Plant Product Quality and Utility (Preharvest)	0%		10%	
205	Plant Management Systems	15%		0%	
211	Insects, Mites, and Other Arthropods Affecting Plants	15%		0%	
212	Pathogens and Nematodes Affecting Plants	15%		35%	
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%		10%	
502	New and Improved Food Products	0%		5%	
511	New and Improved Non-Food Products and Processes	0%		10%	
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: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	4.2	0.0	9.0	0.0
Actual Paid	2.6	0.0	12.0	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**
158378	0	395045	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
158378	0	395045	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
121993	0	5069423	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 5,685 direct educational contacts through Extension and 158,063 indirect contacts. Team members published two articles in refereed journals, five peer reviewed multi-state Extension publications (PNW), and participated in projects funded by $659,730 in grants.
The sugar beet and minor crops team integrated field research, demonstration, and outreach education primarily related to crop pests, diseases, weeds and weed control, rotational studies, irrigation systems, and soil moisture relationships. Team members conducted numerous on-farm consultations for nutrient management and disease and pest control. Field studies and tours were conducted in collaboration with growers and in UI Agricultural Experiment Station fields to study pesticide residues, green manures and compost manure applications, sugar beets as an alternative feed, management of insect pests and their natural enemies, soil-borne pathogens such as Rhizoctonia and Pythium, the influence of humic substances on water and fertilizer use efficiency, and use of soil amendments, biochar, humic acids, and biostimulants in the prevention of soil crusting. In northern Idaho, spring and fall variety trials were established for a variety of peas (including trials of winter peas as a cover crop), lentils, and chickpeas. A seed treatment study was established to evaluate novel chemistries for control of Pythium damping-off on chickpea. The results of this study will contribute to ongoing studies on these resistant isolates as well as provide data on alternative seed treatment chemistries for management of this disease.
Pest diagnostic services and treatment recommendations are provided for growers. Pest monitoring and pest survey activities are conducted and coordinated by UI Extension faculty. Economically important pests and pathogens were studied, including Rhizoctonia, Pythium, Septoria leaf spot, and cyst nematodes. Significant efforts were devoted to weed management, pesticide registration, and development and extension of knowledge about Integrated Pest Management (IPM) tools. Pesticide applicator re-certification and pesticide safety training were offered in both English and Spanish.
New and practical information was shared through Extension workshops, at commodity schools, and through presentations at grower and industry meetings and conferences. PNW weed management handbooks were updated, and many publications are now available on a new website.
Additionally, during this timeframe there was 1 plant variety patent issued for 'Durola' rapeseed.

2. Brief description of the target audience

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, and farm workers are a targeted audience of this program. Other targeted audiences include sugar beet growers, growers of minor crops, and those who advise growers (i.e., 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

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	5685	158063	49	0

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

Patent Applications Submitted

Year:	2015
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	5	10	15

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Extension workshops, schools and conferences.

Year	Actual
2015	13

Output #2

Output Measure

- Field tours and demonstration projects.

Year	Actual
2015	10

Output #3

Output Measure

- Applied and basic laboratory and field research experiments

Year	Actual
2015	42

Output #4

Output Measure

- Professional invited presentations.

Year	Actual
2015	10

Output #5

Output Measure

- Presentations at Extension Workshops, schools, and conferences

Year	Actual
2015	48

Output #6

Output Measure

- Sugarbeet costs and returns estimates
  Not reporting on this Output for this Annual Report

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: Development of new research information. I: Research publications (peer reviewed).
3	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).
4	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.
5	Evaluate weed control in dry beans.

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

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	639

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, 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
In the evaluation for the PNWPestAlert.net website, 54% of survey respondents reported that as a result of information received through the website, they increased their field scouting to document pest levels before taking actions to control pests.

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: Development of new research information. I: Research publications (peer reviewed).

Not Reporting on this Outcome Measure

Outcome #3

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).

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	14

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Soil health is important for growers if they are to maintain yields and remain economically viable over time. In addition, soil health is important to maintain or increase production to feed an ever-increasing population.

What has been done
The annual Treasure Valley Irrigation Conference was held in Nampa, Idaho in December of 2014. As part of the NRCS "year of soils" members of this topic team included a presentation on soil health at this conference.

Results
From before to after the conference, participants indicated they were 70.5% more likely to implement BMPs that would improve soil health.

4. Associated Knowledge Areas

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

Outcome #4

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
2015	590

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Growers of dry beans in Idaho have varying ideas on the need for nitrogen fertilizer in beans. Some apply according to recommendations, some apply none, and others apply according to their own ideas.

What has been done
Members of the team presented midterm data at bean schools and field days. Growers have expressed great interest in determining actual N needs of beans based on Idaho research data.

Results
To date, growers have only expressed cursory increase in knowledge based on this work. As the final harvest has just been completed, the total project results will be presented at upcoming bean schools in 2016 with a better evaluation of producers change in knowledge but more importantly their planned change in practices.

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

Outcome #5

1. Outcome Measures

Evaluate weed control in dry beans.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Dry bean producers face weed control problems throughout the growing season.

What has been done
The study evaluated several soil-active herbicides applied as post emergence sequential treatments to obtain season-long weed control in dry beans. Also, these same treatments in dry bean planted in 7.5 inch row spacing compared to the standard 22 inch rows were evaluated.

Results
Results showed that narrow row spacing of dry bean can provide an advantage for competition against weeds.

4. Associated Knowledge Areas

KA Code	Knowledge Area

213 Weeds Affecting Plants

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The weather in the spring and early summer may have impacted the results of the Extension variety trials and research trials. The spring and early summer were drier and warmer than normal. However, the biggest impact was the extremely unusual temperatures that were observed the last week of June, where highs were in the upper 90s to lower 100s. These high temperatures had a negative impact on both winter and spring sown legumes. The high heat resulted in abortion of flowers in most of the legume trials. As a result, most yields for the 2014-2015 growing season were below normal.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

After learning about soil health at the Treasure Valley Irrigation Conference, 71 percent of evaluation participants indicated they were "more likely" to implement irrigation Best Management Practices to improve soil health. Also, after attending the pesticide application recertification program, 73 percent of participants indicated they were likely to choose an herbicide with a different mode of action when making consecutive applications to the same field to help manage chemical resistance. Before Spanish Pesticide Safety Education class, 53 percent of attendees understood how to select and use personal protective equipment, and how to protect themselves from pesticide exposure. Following the class this number increased to 100 percent. After a seminar at the Idaho/Oregon Winter Seed School (alfalfa) on spray drift, 71 percent of attendees said they were more likely to implement practices learned at the seed school to minimize spray drift and reduce the potential for offsite pesticide movement and damage to other crops and pollinators. Program participants at the Treasure Valley Bean School reported a 66 percent increase in knowledge about proper application procedures for white mold control in dry beans.

Key Items of Evaluation

Meadow voles have become a large pest problem this year in southern Idaho. Currently there are registrations for zinc phosphide on several commodities produced in this area. Triticale is a small acreage crop and relatively new. Triticale did not have a registration for zinc phosphide, and was rapidly being devastated by voles. Through a "paper argument" with the Idaho IR-4 project and the national IR-4 project, the team worked with the registrant to submit a request for registration to EPA, based on the data that was collected for wheat and barley in Idaho. The team argued that triticale is in the same crop group, and

is a hybrid of wheat and rye, therefore would be covered by the wheat and barley tolerances already set by EPA. Within two weeks, the registrant had a label approved by EPA and it was available for use by Idaho triticale producers, saving nearly 100% of the acres planted.

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: 2015	Extension		Research	
	1862	1890	1862	1890
Plan	17.0	0.0	0.0	0.0
Actual Paid	21.1	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**
453768	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
453768	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1858576	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Team members reported 113,001 direct educational contacts through Extension and 182,872 indirect contacts. Team members published two articles in refereed journals, five peer reviewed multi-state Extension publications (PNW), and participated in projects funded by $485,896 in grants.

Project 1: 4-H Science

Several 4-H projects help youth and adults increase science skills. Animal science programs and projects integrate science processing skills and quality assurance practices. Program areas include animal evaluation, equestrian projects, 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 the 4-H National Youth Science Experiment, rocket experiments, food science, crime and spy science, and environmental 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 a piloted Healthy Modern Life Skills project, cooking classes, and implementation of 4-H Healthy Living Youth Voice Youth Choice and 4-H Food Smart Families grants

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. Several Idaho Extension faculty developed a new curriculum, called the Idaho 4-H Leadership Portfolio. It was piloted in 2014, evaluated, and finalized for use in the 2015-16 4-H year.

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 Native American youth and young people in juvenile corrections facilities: Rockin' the Rez Summer Youth Camp; teaching students about the first foods and native plants of the Coeur d'Alene people through an interactive nature walk; and the Juvenile Corrections Center University Fair in St. Anthony, Idaho, which reached over 120 at-risk youth, giving them the opportunity to learn about attending and paying for college at regional institutions.

A new focus this year is reaching out to high school students and encouraging them to make plans to attend some form of postsecondary education. Scholarship Workday is a University of Idaho Extension program designed to guide youth and their families through the process of finding and applying for scholarships. Build Your Future is a new National 4-H Curriculum and part of the 4-H Citizenship Mission Mandate. The curriculum helps youth develop skills and knowledge in career exploration. The project was piloted by teens in Minidoka County and accepted for use in Idaho in 2015-16.

2. Brief description of the target audience

- Idaho youth and their families
- Youth in school enrichment and afterschool programs
- Low income youth and families
- Youth-at-risk, including youth at juvenile corrections centers
- Children and families with military ties
- Hispanic youth and adult volunteers
- American Indian youth and adult volunteers
- 4-H volunteers
- FFA members and advisors
- Adult and youth volunteers
- Teachers and out-of-school instructors
- After-school programs and in-school enrichment
- Youth development staff

- Fair board members
- Extension educators
- Community leaders and businesses
- Community members

3. How was eXtension used?

There were no reports of eXtension use.

V(E). Planned Program (Outputs)

1. Standard output measures

2015	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	40027	128120	72974	54752

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

Patent Applications Submitted

Year:	2015
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2015	Extension	Research	Total
Actual	5	2	7

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
2015	20607

Output #2

Output Measure

- Number of volunteers in educational classes and workshops.

Year	Actual
2015	3754

Output #3

Output Measure

- Number of opportunities to promote 4-H Youth Development (publications, newsletters, columns, radio PSA's, radio/TV appearances) written or developed.

Year	Actual
2015	1051

Output #4

Output Measure

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

Year	Actual
2015	1354

Output #5

Output Measure

- Number of 4-H clubs or groups.

Year	Actual
2015	1236

Output #6

Output Measure

- Number of youth attending statewide 4-H events.

Year	Actual
2015	2027

Output #7

Output Measure

- Number of volunteers attending county, multi-county, district, state, regional, and national events.

Year	Actual

2015	2123

Output #8

Output Measure

- Number of hits on the web site each year.

Year	Actual
2015	20126

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Professional Development for 4-H professionals and volunteers, increasing awareness for 4-H Science project areas. Indicator: Number of workshops offered.
2	Increased knowledge of healthy beverage choices Indicator: Number of program participants who are able to identify what a healthy beverage is and why it is a healthy choice.
3	Increase the number of volunteers per year to reflect the needs of 4-H POW project areas. Indicator: A net increase of 200 volunteers per year accounted for on the annual ES237 volunteer categories.
4	Increase youth and adult volunteer participation in up-to-date, relevant Positive Youth Development, Leadership, and content-related training. Indicator: Total number of youth and adults who attend training and demonstrate knowledge gained in up-to-date positive youth development, content-related training, and leadership-related trainings.
5	Policy changes and cultural climate support to create acceptance of non-traditional programs and their participants. Indicator: Training on the use of culturally relevant curricula and resources
6	Increase youth awareness, application, and value of science in everyday life. Surveys using Common Measures Indicators.
7	Increase the number of educational opportunities to enhance animal husbandry knowledge among youth and adults. Number of educational opportunities offered.
8	The total number of youth and adults trained in communication, teamwork, and other community development skills will increase. Indicator: The total number of youth and adults who assume leadership roles will increase.
9	Increase support for under-served populations by developing programs specifically targeted for youth in non-traditional homes. Indicator: The number of partnerships through Extension and county offices with non-UI funded organizations, businesses, or agencies through cash funding (grants) or in-kind contributions.

Outcome #1

1. Outcome Measures

Professional Development for 4-H professionals and volunteers, increasing awareness for 4-H Science project areas. Indicator: Number of workshops offered.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	55

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The team is working to expand the number and kinds of opportunities 4-H provides for engaging in STEM Learning. Communities care about these opportunities for their youth. Schools care about these opportunities in non-formal education that complement their teaching responsibilities. Business cares about our educational programs to help develop a stronger workforce.

What has been done
A total of 11 workshops were led over the year to promote greater awareness of non-traditional 4-H STEM programs including 5 educational robotics programs that span grades K-12. Four of the workshops were directed toward expanding awareness within 4-H of the Natural Resources/Environmental Education Programs.

Results
More counties are supporting educational robotics programs for their youth. Moreover, counties are offering more robotics opportunities for a wider age span of youth. Four counties have accepted the team?s offer to provide more direct training for volunteers to lead programs in natural resources/environmental education programs.

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

Increased knowledge of healthy beverage choices Indicator: Number of program participants who are able to identify what a healthy beverage is and why it is a healthy choice.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	2783

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Youth serving organizations, health agencies, businesses and communities are all working to improve the health and well-being of Idaho citizens. Healthy living, a 4-H National mission mandate, engages youth and families through access and opportunities to achieve optimal physical and social-emotional well-being. Reducing childhood obesity is a USDA-NIFA priority. 28% of children (ages 10-17) in Idaho are overweight or obese while the national average is 32%.

What has been done
Under the 4-H Food Smart Families programs (National 4-H Council - Walmart Foundation and ConAgra Foundation) 2041 youth were reached with 10 hours of nutrition and food preparation. One session was on Think-Your-Drink in an effort to reduce consumption of sugary drinks and increase consumption of water and low-fat milk.

Results
Youth were surveyed at the end of the ten sessions. Results from post surveys are:
Choose water instead of soda pop or Kool-Aid? (n=810) ? Not hard at all ? 63% ? A little hard ? 27% ? Very hard ? 10%
Drink 1% or skim milk instead of 2% or whole milk? (n=813) ? Not hard at all ? 54% ? A little hard ? 28% ? Very hard ? 19%
Drink less soda pop? n=812 ? Not hard at all ? 58% ? A little hard ? 29% ? Very hard ? 14%
As a result of participating in the 4-H program I drink more water. (n= 636) Strongly Agree ? 58% Agree ? 31% Disagree ? 9% Strongly Disagree ? 2%
Will you ask your parents to purchase non-fat or 1% milk rather than 2% or whole milk? n=158 No ? 26% Maybe ? 36% Yes ? 37%

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
806	Youth Development

Outcome #3

1. Outcome Measures

Increase the number of volunteers per year to reflect the needs of 4-H POW project areas. Indicator: A net increase of 200 volunteers per year accounted for on the annual ES237 volunteer categories.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	106

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Increasing the number of volunteers to lead projects and learning experiences is vital to being able to increase the number of youth reached in the 4-H program.

What has been done
A new volunteer orientation was held which included minor protection, policies, conduct, and important youth development topics. New volunteers were recruited, certified, and enrolled.

Results
Forty-four new volunteers began volunteering with 4-H in Canyon County. With tighter re-certification requirements monitored needing a more dedicated commitment before enrolling in 4-H, Canyon County saw a net loss of 31 adult volunteers. While net numbers are down, it is noted that there is a more dedicated volunteer force than previously.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #4

1. Outcome Measures

Increase youth and adult volunteer participation in up-to-date, relevant Positive Youth Development, Leadership, and content-related training. Indicator: Total number of youth and adults who attend training and demonstrate knowledge gained in up-to-date positive youth development, content-related training, and leadership-related trainings.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	806

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Encouraging and providing youth adult partnerships is essential to the 4-H program's ability to positively function statewide. With this being a basic need for the program to continue, it is of large importance. Up-to-date information regarding positive youth development, specific subject matter content, and leadership is needed for youth and adults.

What has been done
Opportunities for volunteers to provide leadership and support to work with youth and provide quality educational programming were provided. Workshops were offered to teach volunteers and youth skills to become more effective volunteer leaders.

Results
These opportunities are showing quality involvement between youth and adults. Opportunities are going to continue to be provided as well as increase in intensity. Two hundred sixty-one participants learned effective ways to teach to different age levels and how to provide a positive learning environment for youth.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
806	Youth Development

Outcome #5

1. Outcome Measures

Policy changes and cultural climate support to create acceptance of non-traditional programs and their participants. Indicator: Training on the use of culturally relevant curricula and resources

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Increase youth awareness, application, and value of science in everyday life. Surveys using Common Measures Indicators.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	151

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Funders want to know that the programs offered have beneficial impact. The program developers from the team also want to get feedback on the programs so they can make improvements.

What has been done
The team worked with county educators to tailor surveys for use in 4-H Science programs and also with staff to identify appropriate evaluation questions for their sessions. Staff was trained in conducting the survey with their youth.

Results
Preliminary results show strong gains in 3 of the 4 Common Measures factors assessed. The results showed that some youth were realizing that science is in many activities or everyday processes. They also showed that sometimes because of how the common measure questions are worded that youth would not relate the questions to the science in their day camp, but how they felt about science overall.

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

Increase the number of educational opportunities to enhance animal husbandry knowledge among youth and adults. Number of educational opportunities offered.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	65

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Without swine weigh-in there was no way for the youth to record an initial weight and a final weight. Because of this, there was no rate of gain contest last year, or any education on how to use a growth chart. Also covered was quality assurance for swine to implement learning more about producing a quality product.

What has been done
This year a new rate of gain contest was implemented for each species where they would now keep track of their initial weight and have a least five weights recorded throughout the feeding period. During the district Pig Camp the quality assurance for vaccinations in swine was taught. The students practiced giving vaccinations to fruit and went over proper vaccination technique as well as handling of vaccinations.

Results
There was almost 100% participation for swine and some participation in the other species (not a mandatory contest). Youth had a better understanding of using the growth chart and were actively tracking their animals? weight throughout the year. Youth were also able to explain where and how to give a vaccination and why they were important to animal health.

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 #8

1. Outcome Measures

The total number of youth and adults trained in communication, teamwork, and other community development skills will increase. Indicator: The total number of youth and adults who assume leadership roles will increase.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	492

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Providing adults and teens with the skills to effectively work with groups is the key to a strong 4-H program. Many of our programming efforts depend on volunteers and teens who understand what we are trying to accomplish and have the skills to effectively move us toward our goals.

What has been done
The teaching efforts revolve around providing hands-on activities that force the audience to work together to solve a problem. One of the workshops focused on the use of power, influence and authority in leadership situations.

Results
The impact of this work is in the ability of the youth and adults trained to take what is taught and apply it to their work with the 4-H program. Though difficult to measure, youth that have been trained in teambuilding are then used to help train other groups in the program. Not only does their selection help give them confidence in their skills, it also gives them a real-life application of those skills.

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 #9

1. Outcome Measures

Increase support for under-served populations by developing programs specifically targeted for youth in non-traditional homes. Indicator: The number of partnerships through Extension and county offices with non-UI funded organizations, businesses, or agencies through cash funding (grants) or in-kind contributions.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2015	15

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Partnerships with organizations or agencies allows all partners to come together and offer programs for underserved populations. Each organization or agency contributing resources toward a common goal results in implementation of quality programs.

What has been done
Partnerships with Farmway Village, Caldwell School District, the Mentoring Network and the Juvenile Detention Center allowed access to facilities, contributions to existing programs, and implementation of additional programs to reach youth in non-traditional homes (or not currently able to be at home) and provide life skill development.

Results
These partnerships enhanced our current 4-H programming and allowed the 4-H program to reach youth who would not normally be able to experience enough positive interaction with caring adults and gain confidence and life skills to draw on as they grow.

4. Associated Knowledge Areas

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

806 Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (Grant funding, Changes in leader requirements, Employee/Staff turnover, Traveling time/distance, Increased interest in 4-H programming, Position changes)

Brief Explanation

Ada County 4-H continues to struggle to fund all positions in our office due to the lack of an increase in funding from the Ada County Commission. After a severe cut in 2009, our county funding continues to lag behind 2008 levels, and many of our budgets have been trimmed to the point of non-existence. In 2015, we ran out of funding for a key outreach position, and continue to look for external funding to support it.
Participation in 4-H community clubs continues to remain steady, but families' competing priorities remain a struggle. In a county with more than 75,000 youth, opportunities abound, which hinges our success on being able to connect with families as an important program in their kids' lives, and on being able to partner with other youth-serving agencies with similar goals.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Each year, an evaluation is conducted at the 4-H Know Your Government Conference. Several questions are administered to delegates asking them about skills learned in citizenship, using Common Measures questions. In 2015, one result was much higher than the rest: "Because of my participation in KYG, I gain skills through serving my community that will help me in the future." The mean of this question was 3.21 (out of 4), with only 16 respondents (out of 135) answering negatively. This positive result indicates that youth not only enjoy learning how to serve their community, but they realize it is good for them and will help them to thrive in the future.

Key Items of Evaluation

Two 4-H healthy living teen advocates visited with President Obama. The article below, a UICALS press release written by Bill Loftus, tells it best.
Idaho 4-H Members Meet with Obama
Caldwell 4-H'ers Kimberly Lopez, 15, and Lorena Rivera, 14, joined six other 4-H youth meeting with President Barack Obama in the White House Oval Office April 13. The two teens represented the University of Idaho Extension 4-H Youth Development program's

efforts to help the state's youth adopt healthy living skills. They joined a delegation of 4-H youth for a meeting with President Barack Obama and U.S. Secretary of Agriculture Tom Vilsack at the White House to talk about the programs they are leading to improve their communities in healthy living, food security and STEM education. The youth were invited by Secretary Vilsack as part of the White House Rural Council's ongoing effort to turn the tide against rural poverty. The Council's new effort, "Rural Impact," addresses the challenge of rural child poverty by bringing together federal agencies and public and private resources.

Each 4-H youth in the delegation has worked in their home state on programs to provide food, supplies and educational services to better equip families to fight childhood poverty. "President Obama and I met with eight members of the National 4-H community in the Oval Office. Each one of them had an inspiring story about how they are opening up new doors for kids in their hometowns, and how this work is building stronger communities where they can learn, play and grow," said Secretary Vilsack in a blog he posted about the meeting. Lopez and Rivera were chosen because they were among 19 Idaho teens chosen to launch 4-H Food Smart Families teen program. They serve as teen advocates for healthy living, teaching fellow youth ways to make informed decisions about budgeting at the store and cooking healthful meals at home. The program, which is overseen by Caldwell-based 4-H Program Specialist Maureen Toomey, helps families understand that food security reaches beyond meals to consider the value of nutrition education and healthy choices.

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.