2014 University of Idaho Combined Research and Extension Annual Report of Accomplishments and Results

Status: Accepted

Date Accepted: 05/27/2015

I. Report Overview

1. Executive Summary

This combined report of accomplishments for the College of Agricultural and Life Sciences (CALS) represents 98 Extension faculty FTEs in outreach education programs and 65 research faculty FTEs. The Extension FTEs are contributed by 70 county-based Extension Educators organized into three extension districts and 46 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 $9.2 million in external grant support and have recorded 359,622 direct teaching contacts. Extension faculty produced 48 peer-reviewed Extension publications, 65 articles in professional and scientific journals, and 74 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 FY2014, they contributed to 13 program teams (Topic Teams) and outputs included 183 journal publications, 3 plant patents filed, and $28,851,158 of extramural funding expenditures.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	100.0	0.0	73.0	0.0
Actual	98.0	0.0	65.0	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. In 2013, 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 IAES's 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 events 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 PNW region, 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 representative from the executive branch of state government including the Governor's Office, the Dept. of Agriculture, and to a lesser extent, the Dept. of Environmental Quality, Dept. of Health and Welfare, and the Dept. 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 needs of the state and region. This university stakeholder group is an important source of valuable input to the IAES and play 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 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 on campus meetings the departmental advisory committees meet 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 2014, 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 targeted

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 not-traditional 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 2014, 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 2014. Also in 2014, 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 2014 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 2014, 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
2832852	0	2763631	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	2832852	0	2763631	0
Actual Matching	2832852	0	2763631	0
Actual All Other	3119797	0	23276335	0
Total Actual Expended	8785501	0	28803597	0

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

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Sustainable Energy: Land and Livestock

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	5%		0%	
111	Conservation and Efficient Use of Water	5%		5%	
121	Management of Range Resources	10%		5%	
122	Management and Control of Forest and Range Fires	5%		0%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		5%	
205	Plant Management Systems	12%		0%	
213	Weeds Affecting Plants	5%		10%	
215	Biological Control of Pests Affecting Plants	5%		5%	
216	Integrated Pest Management Systems	5%		0%	
301	Reproductive Performance of Animals	5%		15%	
302	Nutrient Utilization in Animals	8%		0%	
305	Animal Physiological Processes	5%		10%	
306	Environmental Stress in Animals	5%		0%	
307	Animal Management Systems	10%		10%	
308	Improved Animal Products (Before Harvest)	10%		10%	
405	Drainage and Irrigation Systems and Facilities	0%		5%	
601	Economics of Agricultural Production and Farm Management	0%		5%	
605	Natural Resource and Environmental Economics	5%		8%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	0%		5%	
901	Program and Project Design, and Statistics	0%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	8.9	0.0	5.0	0.0
Actual Paid	13.1	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
361751	0	328649	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
361751	0	328649	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
448722	0	2408239	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Planned activities include beef schools, forage schools, range-in-school, grazing academy, BQA workshops, weed workshops, monitoring workshops, demonstration/applied research trials, Extension publications, popular press articles, tours, field days, faculty training sessions, web sites, CD-ROM based learning modules, office visits, and farm/ranch visits. The focus of these efforts will depend on stakeholder input, questions, and needs. When appropriate, information generated by the team will be presented in scientific journals and at professional meetings.

Alfalfa and Annual Forage Production and Harvesting planned activities include:

- Alfalfa variety trials
- Annual forage variety trials
- Irrigation management trials and demonstrations
- Idaho Hay and Forage Conference
- Local forage and pasture schools and workshops
- Documenting quality of forages from different production environments
- Investigation and reporting of suitability of alternative forage species and their utilization in livestock production systems to extend the grazing season.
- Popular press and journal articles
- Forages website
- Extension publications

Efficient Production Management and Marketing of Livestock planned activities include:

- Beef Quality Assurance workshops
- Vaccine storage and handing studies and reports

- Intermountain Rangeland Livestock Symposium
- Lost Rivers Grazing Academy
- Local Winter Beef Schools
- Alternative forage production trials to extend the grazing season
- Pasture management workshops
- Baseline survey of beef cattle producers on grazing and feeding practices
- Popular press and journal articles
- Beef website
- Extension publications

Rangeland Resource Management and Utilization planned activities include:

- Intermountain Rangeland Livestock Symposium
- Collaboration with the University of Idaho Rangeland Center
- Wolf-cattle interaction research and workshops
- Regional fire cycle/cheatgrass workshop,
- Collaboration with the Idaho Rangeland Resource Commissions public perception surveys
- Development of a public policy curriculum
- Local rangeland demonstrations, workshops and tours
- Popular press and journal articles
- Range-In-Service
- Extension Publications

2. Brief description of the target audience

The target audience most likely to participate in and benefit from these programs are:

Beef cattle producers, beef industry participants and allied industry representatives, land owners, range/pasture livestock producers, local government and resource management agency personnel.

Livestock and forage producers are likely to be positively impacted by new and improved production practices that will improve their profitability and ecological sustainability.

Alfalfa and grass seed producers are likely to be positively impacted as many improved practices may involve the planting of new varieties with high productivity and pest resistance.

Supplies of a variety of production input are likely to be positively impacts since improved practices may include the use of new materials, machinery or other production inputs.

Small acreage land owners will have a great understanding of the biology of their land and livestock resources, and will be less likely to be impacted by weed invasion or be taken advantage of by unscrupulous input suppliers.

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

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	21737	43744	3406	3939

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	11	22	0

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
2014	16

Output #2

Output Measure

- Workshops (including BQA).

Year	Actual
2014	85

Output #3

Output Measure

- Demonstrations and applied research projects.

Year	Actual

2014	37

Output #4

Output Measure

- Popular press articles.

Year	Actual
2014	54

Output #5

Output Measure

- Newsletters; number of issues.

Year	Actual
2014	51

Output #6

Output Measure

- Field days

Year	Actual
2014	12

Output #7

Output Measure

- Presentations at producer meetings

Year	Actual
2014	250

Output #8

Output Measure

- Budgets developed to improve clientele decision making

Year	Actual
2014	12

Output #9

Output Measure

- Curricula developed

Year	Actual
2014	1

Output #10

Output Measure

- Surveys conducted

Year	Actual
2014	3

Output #11

Output Measure

- Tours conducted

Year	Actual
2014	13

Output #12

Output Measure

- Websites created or significantly enhanced (number of sites)

Year	Actual
2014	9

Output #13

Output Measure

- Blogs created and maintained

Year	Actual
2014	9

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
2014	60

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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
2014	6170

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Issue. Livestock producers operate on a relatively narrow margin. Consequently, small changes in reproductive performance, animal growth, feed efficiency, animal health, and a dozen husbandry practices can have significant impact on the net return to the producer. Animal agriculture also can have significant adverse impacts on the environment and resource sustainability that can be reduced or mitigated through improved knowledge and the implementation of best management practices by the producer.

What has been done
To help increase awareness of end-product quality and provide education on the "meat" side of the industry, the Idaho Beef Summit was created. It was a 3-day educational program that focused on end-product quality and featured speakers, tours, and hands-on workshops on topics ranging from beef quality assurance to meat science 101. Two 4-day hands on grazing workshops were presented (Lost Rivers Grazing Academy). Three new "Cowboy Schools" were developed and delivered to teach producers about different pregnancy checking options, a new castration method and new antibiotics. A cover crop grazing trial in northern Idaho has been used for educational field days.

Results
143 beef producers attended the Idaho Beef Summit and evaluations have been positive. 100% of attendees stated they are more aware of end-product quality after attending the Summit, and 98% of attendees said they would consider end-product quality when making management decisions on the ranch. 35 Participants in the grazing academy demonstrated an increase in knowledge based on pre and post testing. Many participants rated the workshop as "the best they

ever attended." A physicist with an interest in carbon sequestration suggested that "every state and federal legislator should take this class." Due to the results of the cover crop grazing trials, 10 producers adopted this technology into their management system and grazed the forage with their cattle. One producer indicated that adopting cover crop grazing generated $300 net return per acre in pounds gained by his cattle.

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
2014	4653

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Reproductive efficiency of the cow/calf herd is essential to sustainability and profitability of the beef operation and the beef industry in Idaho. Beef cattle are the 2nd largest ag industry in Idaho, and beef cattle production occurs in every county in the state. Water use for forages such as alfalfa or corn are among the highest for crops grown in Southern Idaho. In years of reduced water supply, proper maintenance of irrigation systems can reduce water losses due to leaks, worn nozzles or poor system uniformity, resulting in desired crop performance with less applied water, and in reduced energy costs. The invasive grass Ventenata dubia has resulted in $22,000,000 loss to the economies of eastern Washington and Northern Idaho.

What has been done
The Land and Livestock Team reported more than 30,000 educational contacts associated with 47 schools and workshops in 2014 and through another 153 educational presentations at producer meetings and other venues where the target audience could be reached. Field tours showed producers and agency personnel how cover crops can be adopted and which crops can be used to achieve varying producer and government program goals. Workshops/seminars were focused on principles of cow/calf management and beef cattle reproduction. Research was conducted to identify strategies for invasive plant control and workshops were held to describe the strategies. Range monitoring workshops attracted ranchers and agency personnel to learn and discuss how monitoring tools are used to improve livestock management.

Results
Producers increased their knowledge and understanding of beef reproduction, beef quality management, animal nutrition, grazing management and alternative forages, rangeland monitoring, animal husbandry, and pest management. 1,282 pesticide recertification credits were distributed to license holders associated with forage classes. Twenty new licenses were issued for both private and professional applicators. Professional licenses allow holders to find employment or advance in current employment. Evaluation of extension programs teaching about Ventenata dubia control indicated that 10% of the survey respondents no longer had on their property. The remaining landowners who had reported problems controlling ventenata indicated a 50% improvement in the success of weed control efforts on their property.

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
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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.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Sustainable livestock production depends on efficient growth of muscle throughout the animals' lifespan to yield the maximum quantity of meat for a given amount of input costs. The optimization and efficient use of feed is critically important to the sustainability and profitability of livestock production. Therefore, understanding the physiological mechanisms associated with optimal growth and muscle accretion and how to efficiently produce animal muscle (beef and trout) that yields the best quality is scientifically important. This research is specifically relevant to the US beef industry and the US aquaculture (rainbow trout) industry.

What has been done
Students have received training in the context of muscle physiology and the molecular evaluation of gene expression of myogenic transciption factors and their role in muscle growth. This includes in vitro muscle cell culture, treatment and RNA isolation using both whole cell and laser assisted catapulting of individual cells.

Results
We have further characterized the pax7 gene paralogs expressed in teleost (fish) species as well as their respective promoter domains. Additionally, we have utilized bovine muscle cell clones to examine their response and cross-talk with bovine intra-muscular adipocytes (fat cells). These results improved characterization of the physiological mediation of myogenesis and the bovine muscle cell niche.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
213	Weeds Affecting Plants
215	Biological Control of Pests Affecting Plants
305	Animal Physiological Processes
306	Environmental Stress in Animals
308	Improved Animal Products (Before Harvest)
605	Natural Resource and Environmental Economics

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
2014	440

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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

- Economy

Brief Explanation

strong meat prices have a significant impact on producer motivation to adopt changes in management.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Due to the results of the cover crop grazing trials in Idaho County, 10 producers adopted this technology, included it in their management system and grazed the forage with their cattle. One producer reported that, by adopting cover crop grazing, he generated $300 net return per acre in pounds gained by his cattle. The alfalfa variety trials are in their 2nd production year. Results have shown that there is one variety that is out producing all the others in two locations. Due to this finding, an estimated 3,000 acres have been seeded to this variety.

Key Items of Evaluation

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%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		20%	
202	Plant Genetic Resources	20%		20%	
205	Plant Management Systems	25%		5%	
211	Insects, Mites, and Other Arthropods Affecting Plants	5%		20%	
212	Diseases and Nematodes Affecting Plants	10%		10%	
213	Weeds Affecting Plants	10%		5%	
216	Integrated Pest Management Systems	15%		2%	
405	Drainage and Irrigation Systems and Facilities	0%		2%	
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: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	4.5	0.0	10.0	0.0
Actual Paid	8.5	0.0	8.5	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**
185804	0	391846	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
185804	0	391846	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
102684	0	3354723	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

• Breeding, testing, evaluating wheat and barley varieties throughout Idaho that will evaluate agronomic performance, end-use quality, adaptability to an area or type of production, suitability for specialty markets, and production of seed for moving the varieties into commercial production
• Conducting cereal schools to interact with growers and provide technology transfer for new varieties, pest management practices and problems, management decisions, and integration of cereals in cropping systems
• Conduct field tours and field days to transfer technology as in cereal schools
• Meet with advisory committees, commodity commissions, processors, ag-support industries for feedback and to inform them of work in cereal production in Idaho
• Conduct off campus credit and continuing ed classes, stakeholder seminars, and applicator training/testing for education and technology transfer about cereals
• Write and publish newsletters, Extension publications, progress reports, scientific publications, and general media articles
• Conduct research into cereal production problems as identified in the plan of work
• Interact with other professionals at meetings to transfer knowledge, form alliances, and implement projects
• Document and report progress and accomplishments

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, provide feedback and suggestions for directions of the program.

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

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	10111	54278	12	287

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

Patent Applications Submitted

Year: 2014
Actual: 2

Patents listed
201400419 - UI Platinum Wheat Common
201400011 - UI Silver, Wheat Common

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	9	36	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Idaho Cereal Schools.

Year	Actual
2014	17

Output #2

Output Measure

- Release and adoption of new cereal varieties.

Year	Actual
2014	2

Output #3

Output Measure

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

Year	Actual
2014	12

Output #4

Output Measure

- Develop pest control technology - project/experiments.

Year	Actual
2014	26

Output #5

Output Measure

- Research on management systems - projects/experiments.

Year	Actual
2014	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	Identify the best grain lines to grow in areas with high disease pressure, nematode and water stress.

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

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1806

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Cereal producers and crop advisors need a continual flow of new information about varieties, pests, production practices, nutrient management, and a host of other areas of science that impact their businesses. They also need an opportunity to discuss the implications of new information with experts. Extension has the ability and credibility to provide new information that is free from commercial bias so that growers and consultants are willing to accept and adopt the information.

What has been done
Faculty in the cereals team hosted 12 producer schools, 17 workshops, 20 tours and field days, and made 58 other presentations about related topics to grower meetings and other events where clientele were gathered.

Results
More than 1,800 learners participated in cereal schools and workshops in 2014. Although adult learning preferences do not permit detailed evaluation at most of these kinds of events, pre- and post-tests using wireless audience response systems have allowed incorporation of evaluation for several of our events. In those cases, knowledge gained by clientele has been significant.

4. Associated Knowledge Areas

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

211	Insects, Mites, and Other Arthropods Affecting Plants
212	Diseases and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
405	Drainage and Irrigation Systems and Facilities
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
2014	599

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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	Diseases and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
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

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	610

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Every year, new wheat and barley varieties are developed by both private and public breeders. Often the new varieties have novel disease resistance and/or improved yield and end use quality. To help Idaho to continue being a leader in barley and wheat production it is vital to keep growers and the agriculture industry informed of these new varieties to result in a uniform, high quality product.

What has been done
Variety trials were conducted at various locations throughout Idaho, highlighting newly released varieties of winter and spring wheat and barley. Summaries of new varieties were presented in winter cereal schools and field days as well as an Research Bulletin.

Results
. Growers and industry regularly refer to the results generated by the Idaho variety testing program. Information on yield and other agronomic components is important to inform seed dealers and producers about new varieties, not only about which varieties performed best throughout Idaho, but also regional and local variation in variety performance based on dozens of locations for variety trial plots.

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

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	491

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Soil acidity is increasing in northern Idaho due to the long-term use of ammonium based fertilizers. Related to the soil acidity is an increase in aluminum toxicity and reduction in plant health and reduced yields. While not areas of northern Idaho are being equally impacted, this is a growing problem and needs to be considered by growers in the region.

What has been done
Field research is being conducted at three locations in northern Idaho and collaboratively at three additional locations in eastern Washington. In addition, a webinar on the topic was presented along with talks at three winter meetings and a field day. An article was written for the Idaho Grain magazine highlighting the potential impact of soil acidity and discussing potential solutions including liming.

Results
As a result of research and extension efforts, many growers have been experimenting with lime applications, evident by the numerous piles of lime observed in August and September of 2014 in northern Idaho as well as personal communication with northern Idaho growers. In some cases, growers are observing significant improvements in crop vigor and are reporting improvements in crop yield. Others are reporting no difference following lime application. Additional research is being planned to look at the feasibility and impact of making applications of higher rates of lime according to lime requirement tests.

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	Diseases and Nematodes Affecting Plants
216	Integrated Pest Management Systems

Outcome #5

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Fusarium Head Blight (FSB) is a disease of importance nationally and internationally and is likely to become and increasing problem for growers in Idaho and some areas of the Pacific Northwest because of increasing corn production, reduced tillage, and changing climate.

What has been done
A total of 2060 lines were genotyped with markers of FSB. Approximately 500 lines were selected based on marker genotype and agronomic performance in headrow test.

Results
An M.S. student completed a mapping study and identified two major Quantitative Trait Loci (QTL) and 2B and 3B associated with type II resistance in the cultivar resistance UI Stone. The two QTL are located in the flanking regions of the previously published ones. Under collaboration with genotyping center, the mapping population was genotyped by GBS. The GBS data are currently being integrated to the current linkage map and used in QTL analysis.

4. Associated Knowledge Areas

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

Outcome #6

1. Outcome Measures

Identify the best grain lines to grow in areas with high disease pressure, nematode and water stress.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
A recognized barrier to grain production under dryland conditions is the water and nutrient-robbing fungi that infect stressed root and crown issue.

What has been done
The effect of inoculation on early spring stand, whitehead formation, yield and test weight was significant. Varieties were ranked according to yield under disease and drought stress. There were significant year, block, year by variety and block by variety effects for stand, test weight, whitehead formation, and yield. Block by variety effects were significant for stand, test weight and yield, indicating significant environmental effects typical of soil-borne disease. As is common in experiments examining the effects of soil-borne disease and nematodes, the coefficients of variation were relatively high.

Results
Improving economic conditions for growers to reduce disease losses, and reduced environmental impacts with less foliar fungicide treatments needed to control disease. Clarification on effectiveness of seed treatments for control of foot rot disease is critical, but results of the seed treatment trials indicate that in most years, seed treatments are ineffective in controlling foot rot diseases, especially when measured as impact on yield. Currently, host resistance continues to be the most effective method for reducing fungal and nematode damage.

4. Associated Knowledge Areas

KA Code	Knowledge Area
212	Diseases and Nematodes Affecting Plants

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)

Brief Explanation

Drought has had a significant impact on water available for irrigation in Southern Idaho, potentially impacting varietal trials and rates of varietal adoption.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

In winter of 2014, the Idaho cover crop research was presented at four UI Extension Cereal Schools in eastern Idaho where 332 participating producers were surveyed on current use and future adoption of cover crops. Currently, 16% of producers at the cereal schools use cover crops. After presenting Idaho cover crop research, 48-79% are willing to adopt cover crops with one-third of these producers planning to adopt by the 2015 growing season. The participating producers indicated they would adopt cover crops to achieve multiple management goals, such as to minimize soil wind erosion loss, supplement soil organic matter and nitrogen levels, and scavenge soil nutrients. If one-third of the participants implemented cover crops by 2015, an estimated 94,500 acres of cover crops would be planted in eastern Idaho.

Key Items of Evaluation

Field-scale irrigation scheduling case study sites were established at Osgood, Ririe, and Grace, ID. At each site paired fields were selected with malting barley as the crop, and irrigation system, soils and other factors as common as possible. Paired fields were pivot irrigated at Osgood and Ririe and set-system irrigated at Grace. Irrigation was scheduled on one field of each pair according to farmer practice and on the other by a web-based water budget program utilizing AgriMet ET from the new local AgriMet weather station. On each of the 6 fields, soil moisture sensors were placed at depths of 12, 18, 24 and 30 inches and a tipping bucket rain gage installed to monitor soil moisture status and verify water savings due to better irrigation scheduling.
Water savings due to improved irrigation scheduling in 2014 was for the 3 sites was 5, 15 and 15% for Osgood, Ririe and Grace, respectively. Analysis of soil moisture content with depth and time on both the control and treatment fields suggested that at least 10-15% additional water savings is possible if growers gain confidence in the scheduling procedure and use it more aggressively.

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	5%		20%	
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%	
511	New and Improved Non-Food Products and Processes	0%		5%	
805	Community Institutions and Social Services	5%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	7.9	0.0	1.3	0.0
Actual Paid	8.7	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**
277894	0	46797	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
277894	0	46797	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
313359	0	391835	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Horticulture team members reported 27,527 direct educational contacts and 1,050,031 indirect contacts made through Extension programs. Team members published 10 peer reviewed UI Extension publications and participated in projects supported by $493,802 in grant funds.
Beginning Master Gardener classes were delivered serving 19 Idaho counties in 2014. Five counties delivered shorter, more accessible series' of classes for consumers as an alternative to the rigorous Master Gardener programs. Advanced Master Gardener classes and projects were delivered in eight counties. Idaho faculty organized a number of multi-county gardening symposia and continued to host a regional Master Gardener conference attracting participants from Wyoming, Utah, and Montana, as well as Idaho.
Outreach for commercial producers included collaborations with the Idaho Nursery and Landscape Association to provide instruction at the HortExpo, the Idaho Green Collar College, The Turf, Tree and Landscape Conference, the Kootenai Valley Nursery Growers Conference, the Certified Nursery Professional course, a numerous workshops for fruit, several IPM workshops for commercial growers, a golf course xeriscaping project, and through collaborations with local nursery retailers, including on-site training.
Supervised Master Gardeners and Advanced Master Gardeners delivered more than 100 presentations for local gardening groups and interested publics, served hundreds of residents who sought assistance in our plant clinics, and contributed to dozens of community projects including school gardens and community gardens, community beautification and parks and recreation projects, and water conservation and FireWise demonstrations. Extension professionals also contributed to the founding of a dozen new community gardens, including a garden on the Shoshone-Bannock Reservation that supports 16 active family garden plots. In one county alone, Master Gardeners contributed more than 1,500 hours of community service, much of that in association with community gardens that combined to contribute more than 60,000 pounds of produce to low income residents in 2014.

Media outreach is conducted through regular contributions to seven local newspapers, local TV and radio interviews, through targeted newsletters and trade publications, and through a blog and Facebook and Twitter accounts. 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 three illustrated guides for entomology, managing insects, and pesticide training.

2. Brief description of the target audience

Target Audience - Master Gardener Education Project:

Wide perspective: all Idaho citizens who are consumers of horticultural information and products. The program is designed to develop volunteers capable of providing education that will have an impact on resources management and quality of life within counties and communities statewide.

Narrow perspective: potential Master Gardeners, meaning any Idaho citizen with interest in horticulture and a desire for service. 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 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.

Target Audience - Consumer Horticulture Education Project:

The target audience for this project includes most citizens of Idaho, specifically anyone who consumes horticultural information or products. This broad audience seeks opportunities to learn sustainable horticultural principles from numerous sources, including web sites, publications, popular press articles, presentations, workshops, conferences, demonstrations, short courses, Master Gardener Volunteers and other teaching forums. Organized groups from this target audience, including community public works departments, garden clubs, civic groups, public libraries, church groups, and other interested organizations will often sponsor educational events.

Target Audience - Green Industry Education Project:

The audience consists of all owners, managers, and employees of green industry companies. The audience takes an active role in recommending curriculum, organizing teaching opportunities, and working to become competent horticulturists.

Underserved Audiences

Current underserved groups, include Hispanic, native American, and immigrant populations.

Service to the hispanic communities is hindered by language issues. Spanish-language gardening workshops are being offered in some parts of the state. Team members provide pesticide training to green industry workers in English and Spanish.

The Treasure Valley region of Idaho has become a significant refugee resettlement location, providing a new home to refugees from Asia, Eastern Europe and Africa. Educators and Master Gardeners are partnering with refugee agencies to train these new citizens for success in limited-space commercial and home food production, community gardening projects and green industry jobs.

Pilot programs are being developed to provide Master Gardener and Consumer Horticulture education for the Shoshone-Bannock tribes in southeastern Idaho and the Nez Perce tribe in northern Idaho. If successful, these programs will be expanded by the participating county faculty.

3. How was eXtension used?

no organized use of eXtension is known, but faculty would have used the resources for reference and/or to direct clientele to resources.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	24172	1386322	3355	13709

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

Patent Applications Submitted

Year: 2014

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	6	14	0

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
2014	139

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
2014	18

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
2014	193

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
2014	11

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
2014	231

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
2014	38

Output #7

Output Measure

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

Year	Actual
2014	12268

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
2014	5

Output #9

Output Measure

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

Year	Actual
2014	19274

Output #10

Output Measure

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

Year	Actual
2014	170

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
2014	240

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
2014	200

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
2014	11

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.
8	The Idaho native plant research program focus is to develop and distribute new native plant products for use by the Idaho and Intermountain West nursery industries.

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
2014	25

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
One of the goals of the Idaho Master Gardener Program is to develop skilled amateur horticulturists who are encouraged to adopt sustainable landscape and garden practices and to teach and encourage others in the general public to do so.

What has been done
. Beginning Master Gardener classes were offered in 19 Idaho Counties in 2014. Master Gardeners receive training on 25 topic areas and are asked to report on their level of knowledge increase as a result of completing the course. Advanced courses are offered regionally, to provide additional training for those who can benefit.

Results
All students completing the beginning Master Gardener course are evaluated for knowledge gained across the 25 topic areas. Evaluations indicate that significant learning is taking place and, as importantly, the learners gain confidence about their knowledge and skills to adopt sustainable landscaping and gardening practices.

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
2014	127449

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1200

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
205	Plant Management Systems
216	Integrated Pest Management Systems

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.

Not Reporting on this Outcome Measure

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
2014	25

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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
2014	143

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Master Gardeners offer a valuable resource to the community by serving in plant clinics, on community beautification projects, community gardening projects, and by helping with school gardens. It is important Master Gardeners are properly and thoroughly trained. It is essential to have a continual pool of new volunteers because some are lost each year.

What has been done
Beginning Master Gardener classes were offered in 19 Idaho Counties in 2014. Two counties sometimes combine classes in order to achieve critical mass of learners necessary to justify the classes, and also be able to produce new volunteers in counties where they are needed.

Results
One-hundred forty-three program participants (approximately half of the total participants) completed their Master Gardener certification in 2014, requiring completion of a required commitment for community service.

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 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.

Not Reporting on this Outcome Measure

Outcome #8

1. Outcome Measures

The Idaho native plant research program focus is to develop and distribute new native plant products for use by the Idaho and Intermountain West nursery industries.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Idaho native plant research program focuses on enhancing the profitability and marketing of native plants, thereby making a larger palette of high quality plants available to consumers. By increasing public awareness of native plants increases the ability and willingness to landscape using water-conserving designs. The single greatest impact will be water conservation for the arid West and conservation of other resources through use of sustainable landscaping practices.

What has been done
Research activities involve native plant domestication using unique and effctive methods developed specifically for this purpose: collection from wild populations, field establishment, evaluation, selection and improvement using bulk selection. In July of 2014, a concentrated effort was made to access dwarf forms of Penstemon species for evaluation and commercialization.

Results

A week-long collection expedition was completed, comprising visits to 9 Idaho, Oregon, Nevada, and Utah mountain ranges. Target sites were exposed, harsh ridges at elevations above 9,000 feet. A total of 66 new collections, both of Penstemons and associated species, were collected as cuttings and established in the greenhouse.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
511	New and Improved Non-Food Products and Processes

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)

Brief Explanation

drought tends to increase consumer demand for water-conservation information

V(I). Planned Program (Evaluation Studies)

Evaluation Results

We completed the second part of our Statewide Master Gardener Evaluation project, by surveying Master Gardener Program Coordinators about the type of projects with public value that Master Gardener Volunteers are currently engaged in statewide. This gave us a significant snapshot of our statewide efforts and will be combined with individual MG and public response data in communicating the impact of Master Gardener Programs to key funders, administrators and stakeholders.

Key Items of Evaluation

Outreach performed by Canyon County Master Gardener volunteers focused in the areas of civic beautification, public education, community gardening and youth enrichment, they changed lives for the better in our region.

One volunteer started a pollinator display garden at the Deer Flat National Wildlife Refuge. The Refuge is visited by thousands of adults and children every year, who will now have the opportunity to learn about the often overlooked value of insect wildlife in the environment.

Our volunteers who started Trinity Community Gardens Inc., a 501c3 non-profit, taught over 10 classes this year on their low input, accessible style of high-yield vegetable gardening, along with running an impressive system of gardening and gleaning efforts that put over 60,000o pounds of food into local emergency food provider's pantries. Just this week, they self-published their first book, in both English and Spanish, which will be

distributed and sold this winter and spring to help even more people learn to grow more the "Trinity Way."

We had four incredibly talented and dedicated Master Gardener School Garden Mentors serving this year in the Treasure Valley, helping local elementary schools realize their dreams of having a productive, sustainable, edible outdoor classroom.

Our volunteers also staffed free public health plant clinics in our office, three days a week for six straight months, identifying insects, plant diseases, disorders ,and providing research based, tested advice on how to solve them. Over 500 clientele were directly served in this way.

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%		0%	
603	Market Economics	3%		10%	
604	Marketing and Distribution Practices	3%		0%	
605	Natural Resource and Environmental Economics	5%		15%	
608	Community Resource Planning and Development	10%		15%	
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%		50%	
805	Community Institutions and Social Services	15%		0%	
806	Youth Development	3%		0%	
903	Communication, Education, and Information Delivery	3%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	7.9	0.0	2.0	0.0

Actual Paid	5.7	0.0	1.3	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
171242	0	95485	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
171242	0	95485	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
177766	0	621444	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Community Development Team reported 5,518 Extension direct educational contacts and 60,300 indirect contacts. Team members published three 3 refereed journal articles and two peer reviewed Extension publications and participated in projects funded through $414,282 in grants.
The Community Development Team implemented the Community Coaching for Grass Roots Action program last year to meet the needs of rural communities that desire a focus on action (rather than protracted educational delivery). In 2014 the program was presented in Aberdeen and Lapwai, and was initiated in Arco/Mackay. The Lapwai project (on the Nez Perce Reservation) has evolved into the "Lapwai Community Action Team" that continues the community development vision created through the Grass Roots project. Extension engagement with several local economic development councils and similar citizen-led initiatives is reported across the State.
Local partnerships (with county and city economic development committees) provide opportunities for UI Extension faculty to deliver a variety of educational programs for local leaders and entrepreneurs. Courses including Business 101, Ready, Set, Grow Your Business, and The Dollar Game have brought a range of experts, including Business and Law faculty and agency experts, into communities in 2014 improving understanding and decision-making skills of participants. Extension faculty serve on local economic development boards, assist with the management of business incubators, and mentor local business start-ups.
Extension participates in regional economic development partnerships including the Clearwater and Lost River Economic Development Associations. Statewide partnerships involving Community Development Team members include the Rural Opportunities Consortium of Idaho (to encourage rural entrepreneurship), Wealth Work Northwest (supported by an AFRI grant), and the Idaho Rural Partnership (IRP). IRP conducts community reviews across the State (normally one or two per year). UI participation in the community review in Aberdeen in 2014 provided an entry for the Community Coaching project to be delivered by Extension faculty.

2. Brief description of the target audience

Target audiences include:

- Small business owners in Idaho
- Government organizations/agencies in Idaho
- Community non-profit organizations
- Entrepreneurs - current and future
- Elected officials & decision makers (state & local)
- State & local employees
- New leaders and individuals currently serving in leadership roles
- Rural communities
- UI staff and volunteers
- Educators
- Youth
- Families

Target audiences will participate in educational training opportunities. In many instances target audiences will also be involved in designing of programs, serving on steering committees, teaching of curriculum, recruiting of program participants, and in evaluation & redesign of programs.

3. How was eXtension used?

use of eXtension is unknown for this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	4982	4490	836	483

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	2	28	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Steering Committees/Teams formed.

Year	Actual
2014	5

Output #2

Output Measure

- Materials/Curriculum developed.

Year	Actual
2014	2

Output #3

Output Measure

- Presentations/Workshops delivered

Year	Actual
2014	29

Output #4

Output Measure

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

Year	Actual
2014	10

Output #5

Output Measure

- Conference posters/presentations

Year	Actual
2014	26

Output #6

Output Measure

- Boards & Communities - Facilitated/Mentored/Coached.

Year	Actual
2014	25

Output #7

Output Measure

- Communities served.

Year	Actual
2014	36

Output #8

Output Measure

- Counties served.

Year	Actual
2014	26

Output #9

Output Measure

- web-based educational materials developed

Year	Actual
2014	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	Entrepreneurs: entrepreneurs establish or expand their businesses. I: Number of business owners extablishing or expanding their business.
11	Research focuses on local competitive advantage (embedded strengths and assets, such as natural amenities, universities, geographic location, infrastructure, etc.) and how strengths can be best leveraged to achieve a trajectory of economic growth and community vitality.

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
2014	40

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Rural communities in Idaho are struggling socially and economically due to the recession and longer term changes in the economy. Small business development expansion and retention is critical for sustaining population and services in Idaho's rural communities.

What has been done
Two workshops were held in St. Maries, two in Plummer, one in Tekoa, Washington (with Idaho residents attending) and one in Kendrick. Workshops focused on business feasibility analysis, strategic finances, marketing and business pitching. A UI undergraduate studying business was hired to provide one-on-one assistance to participants. The series, entitled Ready, Set, Grow Your Business, is being replicated in Kendrick and Juliaetta and a waiting list for the series is growing.

Results
47 prospective, new and established businesses have participated in workshops. Participants report learning how to assess a business idea, how to evaluate the success of their business using financial statements and how to more effectively market their business. They also report establishing relationships with other business owners and business development service providers. Six month follow-up interviews are being conducted with participants in the first series held in St. Maries, Plummer and Tekoa. The undergrad working on the project has been coaching several businesses on start-up and expansion activities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation

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)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	117

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Rural communities in Idaho are struggling socially and economically due to the recession and longer term changes in the economy. Small business development expansion and retention is critical for sustaining population and services in Idaho's rural communities.

What has been done
Two workshops in St. Maries, two in Plummer, one in Tekoa, Washington (with Idaho residents attending) and one in Kendrick were held. Workshops focused on business feasibility analysis, strategic finances, marketing and business pitching. A UI undergraduate studying business was hired to provide one-on-one assistance to participants. The series, entitled Ready, Set, Grow Your Business, is being replicated in Kendrick and Juliaetta and a waiting list for the series is growing.

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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 and Social Services
903	Communication, Education, and Information Delivery

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
2014	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Enhancing leadership skills among rural residents increases volunteerism and the likelihood of effective collective action.

What has been done
Community Coaching for Grassroots Action workshops were delivered in Lapwai (Nez Perce Reservation) from October - December, with coaching continuing throughout the year. Participants developed a community vision, action teams, a steering committee and action plans. A core group of leaders has formed and is called the Lapwai Community Action Team.

Results
The Lapwai Community Action team has planned and implemented a community clean-up, an education fair, and a celebration for Earth Day. The committee has provided volunteers for an annual community celebration, created an artist registry, a business plan for a business incubator, and is planning a skate park and an annual holiday tree lighting event in the city park. These actions indicate enhanced community engagement, civic interest, and concrete efforts to increase the vitality of the small, rural community.

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 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)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
It is important that new leaders emerge in rural communities because the small population means there are fewer people to support quality of life and local economic development activities. Young people need to assume leadership roles in a systematic way to prevent gaps in community leadership.

What has been done
UI Extension personnel delivered community leadership workshops, coached, and consulted with local community members and organizations in a number of rural communities.

Results
Participants in Extension programs who have moved into leadership positions include a young woman in Butte County elected to the Board of County Commissioners based on her platform for community economic development, a Tribal member leading the development of the Lapwai business incubator, a community member leading the development of the Lapwai skate park, several Hispanic residents in Aberdeen engaging with traditional (non-Hispanic) community leadership institutions, and two individuals who joined forces to found a new Chamber of Commerce association for a community on the Coeur d?Alene Reservation.

4. Associated Knowledge Areas

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

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
2014	22

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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 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
2014	156

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Youth, especially youth in rural communities, do not always understand the myriad of options for them post-high school therefore they need repeated exposure to a variety of educational and career options. UI Extension provided a table with three adults during the Lakeside High School Career Fair.

What has been done
Extension faculty participated in career fairs at high schools serving two Indian Reservations and in three other rural counties. Extension faculty handed out materials and visited with high school students (and guidance counselors) about opportunities in higher education and about careers that are attractive to rural youth. This is particularly important for Native American youth who are less likely to be aware of education and career opportunities that match their cultural interests.

Results
More than 600 rural high school youth received information about various college opportunities and career paths that they may pursue.

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
2014	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions 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
2014	27

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Non-Profit organizations in rural counties lack resources and partnerships that are readily accessed by similar organizations in more urban areas. These limitations restrict the ability of these organizations to fulfill their mission and goals, often related to improving community social and economic vitality.

What has been done
In Lemhi County, Extension led the formation of an association for local non-profits called Working Together. This association aims to help leverage funds, training, and other resources, and to provide a forum for regular communication and networking.

Results
The initial group has grown to a membership of 25 and convenes on a monthly basis to share information consistent with the purposes of the association.

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 and Social Services

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.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
124	Urban Forestry
131	Alternative Uses of Land
134	Outdoor Recreation
608	Community Resource Planning and Development
903	Communication, Education, and Information Delivery

Outcome #10

1. Outcome Measures

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
2014	7

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Business development is necessary for the survival of rural communities. When exporting businesses fail or become reduced in size the community contracts physically and economically. Even one business in a small community can have a large impact. New businesses foster positive and hopeful attitudes about the future and can provide employment and other local economic activity. Training provides skills and knowledge needed for local businesses to be successful.

What has been done
. UI Extension personnel delivered workshops, coached, and consulted with local community members and small business owners in rural communities.

Results
Three community members started businesses at the Farmers Market associated with the Nez Perce Reservation creating $800 in new economic activity. A dance studio was started in a small community providing opportunities for a wide age range of children. A small manufacturing business is in the process of building a marketing plan. A guitar maker is expanding his business through market development. A small textile manufacturing business is in the start-up phase.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
603	Market Economics
604	Marketing and Distribution Practices
608	Community Resource Planning and Development

Outcome #11

1. Outcome Measures

Research focuses on local competitive advantage (embedded strengths and assets, such as natural amenities, universities, geographic location, infrastructure, etc.) and how strengths can be best leveraged to achieve a trajectory of economic growth and community vitality.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Community capitals are linked to a rural community's ability to foster asset or place-based entrepreneurship, innovation and development of value chains. Research and Extension programs developed will be designed to add to existing knowledge about how to better define and measure community capitals, inventory assets and capitals available to rural communities and assess the impacts of types of development and Extension programs on community capitals and on levels of individual and community well-being.

What has been done
Initial meetings with two southern Idaho rural communities to begin an asset inventory and action planning process for community and economic and development took place.

Results
Professional development was provided to small business owners in rural northern Idaho communities via workshops and coaching. Community development and natural resource management researchers and practitioners learned to use the Ripple Effects Mapping to evaluate program impacts and code resulting data to the community capitals framework.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

The Lapwai Community Action Team (LCAT) decided to initiate their first projects on Earth Day, 2014. They had existed for only four months after participating in the Community Coaching for Grassroots Action workshops. They organized a contest that resulted in several tons of garbage being collected and the grand prize, a lawnmower donated by a local business, went to a Nez Perce elder who makes money by mowing lawns but whose old lawnmower had recently broken down. Native plants that attract butterflies (Lapwai means "land of the butterflies") were planted at the entrance signs to Lapwai and booths for each of the action committees under LCAT resulted in the recruitment of five new volunteers. We have a wonderful aerial photograph of community members standing in the shape of a butterfly. It looks more like a heart, but it is still really cool. This will be an annual event from now on and will be one event in a month long butterfly festival.

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%		30%	
302	Nutrient Utilization in Animals	15%		30%	
305	Animal Physiological Processes	15%		0%	
307	Animal Management Systems	20%		20%	
308	Improved Animal Products (Before Harvest)	15%		20%	
311	Animal Diseases	15%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	2.1	0.0	2.0	0.0
Actual Paid	2.9	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**
107404	0	50170	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
107404	0	50170	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
78584	0	825757	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

1. Dairy Management

Dairy is the number one agricultural commodity in the state of Idaho Achieving optimal production efficiency and profitability are goals for all Idaho dairy producers New management techniques are available for improving reproductive performance, nutritional management, heifer management, milk quality, and cow comfort Extension faculty conduct field demonstration trials for a variety of management techniques Successful trial results can be used to encourage adoption of management techniques which ultimately increase production efficiency and profitability.

2. Dairy Workforce Development

University of Idaho Dairy Extension provides educational opportunities for current and future Idaho dairy employees Educational programs are offered in English and Spanish to provide the greatest opportunity for participants to acquire the knowledge and skills necessary to be a productive, reliable member of the dairy workforce. Topics covered include milking, milk quality and food safety, artificial insemination, raising healthy calves, mixing feed, hoof trimming, and identifying sick cows and calves. Ultimately, the integration of an educated workforce with optimal production practices, and adoption of new technology, will likely help determine the growth, sustainability and profitability of the Idaho dairy industry in the future.

2. Brief description of the target audience

The target audiences most likely to participate in and benefit from dairy extension programs are: dairy producers, dairy workers, and allied industry.These audiences will participate by serving on planning committees, attending workshops/schools, meeting one-on-one with topic team members, reading extension publications, and participating in on-farm projects.

Approximately 90% of the dairy labor force is Hispanic. The dairy extension team has developed numerous educational schools for training dairy workers (in Spanish and English). Additional schools will be developed as needs dictate and resources allow. Further, in association with the International Rescue Committee and other resettlement agencies, University of Idaho Dairy Extension has developed English language milking schools for refugees (from Burma, Somalia, Eritrea, Uzbekistan, Nepal, Iraq, Afghanistan, Togo, and Bhutan) resettled in Idaho. Additional English language schools will be developed for refugees in the next two to five years.

3. How was eXtension used?

Dairy team members contributed to DAIRYeXTNET

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	4884	60300	770	0

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	3	10	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Winter Dairy Forums.

Year	Actual
2014	1

Output #2

Output Measure

- Milker schools.

Year	Actual
2014	4

Output #3

Output Measure

- Calf Schools.

Year	Actual
2014	2

Output #4

Output Measure

- Artificial Insemination Schools.

Year	Actual
2014	2

Output #5

Output Measure

- Feeder Schools.

Year	Actual
2014	1

Output #6

Output Measure

- Popular Press articles.

Year	Actual
2014	5

Output #7

Output Measure

- Abstracts and Proceedings.

Year	Actual
2014	4

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	Dairy producers will be better equipped to determine heat detection accuracy, as measured by plasma progesterone concentration, of artificial technicians using once-daily tail chalk or tail paint application and reading in nulliparous dairy heifers.

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
2014	191

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Training of dairy workers has been identified as a very important issue for the Idaho dairy industry. Milkers need training on how to perform proper milking routines and understand about milking procedures and why it is important. Dairy workers need to increase they knowledge of animal welfare and care to avoid mistreating cows.

What has been done
UI Extension faculty members held animal care workshops, milker certification workshops, and AI schools in Spanish and English. The Extension Team created and distributed animal care signs at meetings and through farm visits.

Results
All participants (100%) attending the Spanish and English language AI Schools successfully performed semen handling and passed the AI gun through the cervix of a cow. A significant increase in knowledge among participants in milker schools and animal care workshops, as determined by a pre/post test.

4. Associated Knowledge Areas

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

311 Animal Diseases

Outcome #2

1. **Outcome Measures**

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

Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

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

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).

Not Reporting on this Outcome Measure

Outcome #5

1. **Outcome Measures**

Dairy producers will be better equipped to determine heat detection accuracy, as measured by plasma progesterone concentration, of artificial technicians using once-daily tail chalk or tail paint application and reading in nulliparous dairy heifers.

2. **Associated Institution Types**

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual

2014 0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
As diary producers manage larger herds, labor efficient management strategies such as once-daily heat detection (via daily tail chalk or tail paint application and "reading", i.e., identification of roughened hair on the tailhead or lost chalk or paint) and artificial insemination (AI) are more common. Dairy heifer fertility varies widely and heat detection accuracy in heifers has not been the focus of reproductive research in the past 25 years.

What has been done
Blood samples from dairy heifers (n=676) were collected, assayed for progesterone concentration, and heat detection accuracy of AI technicians (n=2) was determined. Preliminary data, presented graphically and without statistical analysis, has been shared with cooperating diary producers, artificial insemination technicians, and veterinarians.

Results
Informing the target audience (producers, AI technicians and veterinarians) of these findings have changed the knowledge base and behavior and ultimately has increased reproductive and economic efficiencies for the diary heifer-raising experience.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals

V(H). Planned Program (External Factors)

External factors which affected outcomes
- Natural Disasters (drought, weather extremes, etc.)

Brief Explanation

water shortages are influencing management decisions on Idaho dairies

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Effect of on-farm training on the welfare and health of dairy cows, specifically on locomotion and body condition scores: Lameness is one the leading welfare concerns in the dairy industry. Twelve dairy farms in Idaho and Colorado were contacted by University of Idaho and Colorado State University extension personnel to participate in this pilot project. All lactating cows were observed for locomotion score and Body Condition Score by an experienced observer, during both the initial and the follow-up visit. Half of the dairies received an on-farm training that covered various topics of Animal Welfare. All dairies completed a survey both at the beginning and end of the study. Data are currently being summarized to determine whether there was an effect of the on-farm training on

locomotion and body condition scores of dairy cows.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Family Economics

☑ 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: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	2.7	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**
70795	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
70795	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
79139	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Family Finance team reported 8,130 direct educational contacts through Extension and 213,875 indirect contacts and participated in projects supported by $134,421 in grant funds.

The Family Economics team created and delivered dozens of presentations for a variety of audiences. Primary emphasis on adult education was delivered through 74 lessons and workshops about identity protection, predatory lending, organizing financial paperwork, and establishing financial goals. Fourteen workshops targeting senior learners discussed topics including estate planning, retirement planning, and health care concerns were delivered. Although the target is really to reach adults, a new partnership with the Idaho Commission for Libraries benefits adults and youth in communities because Extension is training librarians to become more competent to direct patrons to personal finance resources.
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 train-the-trainer workshops in Idaho (12 sessions). An exciting new partnership with Northwest Farm Credit allows UI Extension Family Finance faculty to lead the development and dissemination of a new youth financial literacy program for Alaska, Oregon, Montana, Washington, and Idaho.
Other youth financial management efforts included 62 events teaching Welcome to the Real World to more than 1,400 teens, and 30 sessions of a variety of youth-oriented programs including Credit Score Millionaire, Money on the Bookshelf, Money Ninja Warrior and similar programs targeting youth.
Indirect methods to reach learners included newsletter and public media articles and interviews, video spots, and a website, and work continues on the virtual reality project in financial management.

2. Brief description of the target audience

Basic Financial Management: Young adults and those who are new to financial management (widows, divorcees, immigrants, etc.) and individuals who need to improve their financial management practices will use family economics publications, web sites and participate in classes/workshops. Professionals who work with low-income audiences and those with financial challenges will be trained and/or provided with family economics publications and curriculum.

Financial Security in Later Life: Adults will utilize publications, web sites, and educational programs covering retirement planning, investing, government programs benefitting senior citizens, long term care and legal education. Mid-life and older adults who are caretakers of elderly relatives and friends will use publications, the website and/or attend classes. Profesionals who serve elderly clients will use publications, curriculum materials, website and/or training provided by extension.

Youth Financial Literacy: Teachers, youth group leaders, parents and youth will utilize web sites, publications and educational programs. Teachers and youth group leaders will purchase extension curriculum for youth.

3. How was eXtension used?

use of eXtension was not reported for this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	4198	229552	3932	84305

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	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
2014	37

Output #2

Output Measure

- Popular Press articles.

Year	Actual
2014	10

Output #3

Output Measure

- Professional or paraprofessional trainings.

Year	Actual
2014	6

Output #4

Output Measure

- Classes, seminars, and workshops.

Year	Actual
2014	189

Output #5

Output Measure

- Websites developed or updated.

Year	Actual
2014	5

Output #6

Output Measure

- Lesson/curriculums developed and published.

Year	Actual
2014	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Participants increase awareness of effective financial management practices.I: Number of participants reporting awareness on end-of-class evaluations.
2	O: Participants gain new personal finance knowledge.I: Knowledge gain reported on end-of-program evaluations.
3	O: Participants adopt recommended financial practices.I: Participant responses on end-of-program and follow-up evaluations.
4	O: Extension Family economics 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
2014	813

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Money management is a critical life skill. Yet, many American families report living beyond their means. Many children and adolescents are not being taught how to manage their money by their parents or personal finance courses in schools. Teens are active consumers, spending 98% of their money instead of saving it. Additionally, more than 1 in 5 youths ages 12 to 19 have their own credit cards or have access to parent's credit cards, and 14% have debit cards.

What has been done
The personal finance team taught 87 financial management programs to youth during 2014, including Credit Score Millionaire (6 sessions), Money on the Bookshelf (9 sessions), Money Ninja Warrior and Mad City Money (4 sessions), Credit and Career (4 sessions), and Welcome to the Real World (62 sessions).

Results
Sixty-eight students completed an evaluation following a workshop. Results indicate the percentage of students learning each skill. I know how to write a check - 54%. I understand the difference between wants and needs - 51%. I know how to open a savings and checking account - 74%. I know how to balance a checkbook register - 91%. I know how to set up and use online banking - 90%. I understand that there are budget percentages for different expense categories - 79%. I understand that there is a relationship between education and potential earnings - 76%. I understand the 'time value' of saving money - 74%.

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
2014	1004

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In 2013, Latah County had 6,450 residents out of a population of 38,078 who lived in poverty. The average apartment rental was $661. A person making the minimum wage of $7.25 would need to work 91.17 hours a week to afford a basic residence. 55% of renters are unable to afford their rent. And basic necessities are put aside to make ends meet.

What has been done
A series of workshops was initiated in 2014 as a way to reach new stakeholders. Twenty-six workshops focused on basic financial topics in a Lunch and Learn format - bring your lunch and learn a new topic. Workshops have been popular not just with lower income families and students but also with the organizations that work with those living in poverty. In a train-the-trainer setting, the faculty member has managed to share materials with organizations like Dept. of Health and Welfare, YWCA, County and City departments, Tribal educators, etc.

Results
Information shared in these classes extends beyond participants to reach their clients as well. Each of the program participants (100%) related to the material on a personal level and listed actions they planned to take to improve their financial well-being whether it was tracking expenses, creating a bucket list, starting to save, repaying debt, or checking credit. A major success of the program has been an increase in referrals for teaching opportunities with new clients, as well as new learners attending a variety of personal finance classes offered in the county. Several attendees representing other organizations have invited Extension to come and teach in locations accessible for those lacking transportation or ability to get to the Lunch and Learn classes. The project has been an important stakeholder-building venture.

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
2014	424

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
One in four of us will experience some type of identity theft at some point in our life. Every 21 seconds, an identity is stolen. The personal information these thieves steal is used for all sorts of crimes - some just to use your money, some to use your identity to do something terrible in your name. Thieves often target our more vulnerable, elderly populations.

What has been done
Personal Finance Team members delivered 10 workshops in 2014 specifically targeting identity theft. Workshops are delivered to young adults in high school and college settings, and to adults in community settings, frequently in partnership with local organizations (AARP, banks, etc.).

Results
Evaluation of participant intentions is performed following these workshops. In nearly all settings, 100% of the participants plan to change at least one behavior. For example, in one series of workshops, 74% planned to order their credit reports; 91% would be more careful with the information they shared and would ask how the information would be cared for; and 96% said that they would limit the number of credit cards and other identifying information they carried. Follow-up phone calls and emails sent to Extension faculty from participants indicate that, at least in the area of identity protection, intentions expressed by learners often results in changes in behavior within a short period of time.

4. Associated Knowledge Areas

KA Code	Knowledge Area

801 Individual and Family Resource Management

Outcome #4

1. Outcome Measures

O: Extension Family economics 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
2014	9010

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

More than 3,700 youth participated in the Welcome to the Real World personal finance program in their high schools. An evaluation survey following the class indicates that youth gain significant knowledge and skill related to money management. Responses to the survey in a typical class include 98% who agreed/strongly agreed that WTRW was interesting; 98% who agreed/strongly agreed that the information and activities were helpful; and 98% agreed/strongly agreed that participating in the program would be helpful in their futures. 75% of students learned budget percentages for different expense categories, 70% learned how to balance a checkbook register, and 57% learned the value of money over time.

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%	
132	Weather and Climate	0%		10%	
601	Economics of Agricultural Production and Farm Management	30%		10%	
602	Business Management, Finance, and Taxation	25%		10%	
603	Market Economics	15%		20%	
605	Natural Resource and Environmental Economics	10%		10%	
606	International Trade and Development Economics	10%		10%	
609	Economic Theory and Methods	5%		10%	
610	Domestic Policy Analysis	5%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	3.5	0.0	2.0	0.0
Actual Paid	5.7	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**
158259	0	189138	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
158259	0	189138	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
138232	0	571650	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Farm and Ranch Management team reported 6,815 direct educational contacts through Extension and 23,210 indirect contacts. Team members published four articles in refereed journals and seven peer reviewed Extension publications. Members participated in projects funded by $156,857 in grants.
The Farm and Ranch Management team also worked with stakeholders to teach retirement and succession planning. Estate planning and succession vents and presentations were delivered in 12 different communities during 2014 and included four-day courses and one-day workshops focused exclusively on farmers and farm succession issues. The Team delivered a variety of other courses and workshops in 2014. Six to twelve-week farm management courses were taught in three Idaho counties, including farm management training required to meet FSA borrowing requirements. Individual schools, classes, workshops and workshop series covered topics including marketing and risk management, budgets and budgeting tools. Other important tools developed and used by UI Extension include dozens of enterprise budgets updated and published bi-annually. These budgets are distributed at workshops and other events, and are available on-line, to improve producers' ability to make sound financial decisions about their operations.
A very successful program piloted in 2014 included the Burley and Idaho Falls Outlook Seminars. These events attracted local producers and supporting industry members including bankers, processors, suppliers, etc., to learn about recent trends in their businesses and to discuss the likely scenarios for the near future. Other educational events included farm tools workshops, futures workshops, and presentations at various grower meetings covering topics such as fertilizer economics, rental formulation for pasture, and the economics of irrigation efficiency. Team members completed the 2013 edition of the Value of Idaho Agriculture compilation and publication, and presented results to State legislators and other decision makers, including county boards of commissioners in 2014; and collected the data for 2014 that will be needed to produce the 2015 edition of the publication.

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 would include 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/or evaluate alternative crops/cropping systems or alternative livestock/livestock production systems.

Participants will attend workshops, seminars and classes offered in a number of venues, including the traditional commodity schools/conferences as well as specialized farm managment classes. Program participants will also access decision-aid computer programs and other resource material directly from the

Agricultural Economics and Rural Sociology web site.

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

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	6475	22885	340	325

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	2	9	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Farm Management Schools/Classes.

Year	Actual
2014	6

Output #2

Output Measure

- Crop & Livestock Costs and Returns Estimates Published.

Year	Actual
2014	15

Output #3

Output Measure

- Media Contacts.

Year	Actual
2014	106

Output #4

Output Measure

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

Year	Actual
2014	107

Output #5

Output Measure

- Office/one-on-one consultations

Year	Actual
2014	605

Output #6

Output Measure

- Hits on Idaho AgBiz web site

  Not reporting on this Output for this Annual Report

Output #7

Output Measure

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

Year	Actual
2014	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	Determine the factors that influence private grazing lease rates and develop and refine ranch value modeling efforts in Idaho and other western states.

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
2014	1669

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Agribusiness is Idaho's largest industry. Monitoring the financial health and well-being of Idaho agriculture is a constant concern for policy makers and industry leaders throughout the state. Conditions in the agricultural sector can be extremely volatile. In the past, timely information has not been available for the state's financial condition report.

What has been done
Economic Contribution of Idaho Agribusiness is an annual publication that has become one of the most widely circulated publications CALS has ever produced. Content from the report is covered in every major and minor newspaper in Idaho and the Northwest. The report also provides a foundation for the only extension program given as testimony to the state legislature, and for numerous agriculture conferences and workshops throughout the year.

Results
This program has propelled the University of Idaho to be the foremost spokesman for Idaho Agriculture. Without this program, University of Idaho research and Extension would have less of a presence with the state legislature, newspaper visibility, and other agriculture groups in Idaho.

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 Economics

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
2014	949

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Financial management is a key to success in farming or any other agriculture-related small business. Producers want to gain the ability to keep better records in order to get a handle on expenses and better ideas on how to use profit to make their operations more profitable.

What has been done
The Farm Management Team delivered financial and management information through farm management classes, financial outlook seminars, and financial management tools classes, as well as through presentations at dozens of producer meetings, and commodity-based workshops and field days.

Results
Following one of several farm management classes (40 participants) 92% of the producers could answer the three course objectives: 1. Where are we now? 2. Where do we want to be? 3. How do we get there? 100% wrote a mission statement, set strategic goals, and completed an income statement, balance sheets, and a financial analysis. Most completed enterprise budgets and cash flow budgets for the coming year. 100% said they would or already had recommended the program to a friend. When asked which tools they planned to continue using in the future the responses were: Mission Statements 80% Strategic Goals 68% Balance Sheets 96% Income Statements 96% Machine Cost Program 85% Enterprise Budgets 64% Cash Flow Budgets 84% Financial Analysis 84% FinPack Program 88%.

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 Economics

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
2014	80

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Markets are constantly changing making it difficult to manage a farming operation. Having a better understanding of the markets and the projections of the markets can help in alleviating some of the stress in the marketing world.

What has been done
A market outlook conference was developed to study the markets of many different commodities in order to gain some confidence in the future prices and potential problems with those commodities. US and state issues related to different commodities were addressed so that producers and lenders could better understand the stressors of the different commodities and avoid potential problems. Proceedings of the conference were provided in order to help producers have the information available to see markets and be able to better judge where the markets are going. Producers and lenders were also given an idea of the year's input prices in order to gain knowledge of the expenses on an operation as well as the potential income for an operation.

Results
Lenders were able to leave the meeting with a better idea of the potential success of different commodities to allow them to lend money with greater confidence. 88% of Participants indicated a significant knowledge gain in the area of marketing.

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 Economics

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
2014	421

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Farm/Ranch succession is a complicated and difficult process for many producers. Farm/ranch assets are often valued at millions of dollars. Without proper planning, farms/ranches can be lost due to taxes and other issues that could have been minimized with proper planning.

What has been done
. Eight faculty members on the Farm and Ranch Management team partnered to deliver 28 classes focused on farm estate planning and succession, including one-day workshops, a 4-week estate planning class (4 sessions), and a year-2 estate planning class. Classes were held in 18 communities representing each region of the state. 263 clients participated in the workshops where they learned strategies to better interact and communicate with family members. Class members were given the opportunity to role-play in order to see the other side of an issue that they may be struggling with. People were given ideas of how to split operations that may help make the estate planning process easier and given ideas of who could help this process. Class members were taught that there is an amount of money required upon which to retire. This money needs to be provided by the operation so that both groups can be happy in retirement. People were introduced to professionals that would be able to help them accomplish their retirement and estate planning goals.

Results

. In one series (Keeping the Legacy Alive) 75% of participating individuals/families have begun the process of planning/preparing for succession of their farm or ranch. While they are at varying stages of the process, they are progressing. This will impact these families and help protect over $1.2 million in assets per family. If the population of program participants includes three members from each family, then the value of these classes approximates $80,000,000 in net benefit to those families.

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 Economics

Outcome #5

1. Outcome Measures

Determine the factors that influence private grazing lease rates and develop and refine ranch value modeling efforts in Idaho and other western states.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Continual policy debates related to the appropriate rates that governmental units charge for forage leases and state and federal lands require current information on private grazing costs. Numerous issues related to land-use and management changes impact ranch profitability, rangeland values and sustainability of rangeland ecosystems and rural communities in Idaho and other western states.

What has been done

Publication of a research bulletin and two presentations on private grazing lease arrangements were completed. The Idaho Department of Lands and the Idaho Board of Land Commissioners were apprised of the results of the survey and analysis.

Results
Significant training opportunities exist for aspects affecting private grazing lease arrangements. Project results have been disseminated through face-to-face meetings, newsletters, presentations, listserves, websites, and interviews with media outlets.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
605	Natural Resource and Environmental Economics

V(H). Planned Program (External Factors)

External factors which affected outcomes
- Natural Disasters (drought, weather extremes, etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

In 2014, thirty producers completed the Farm and Ranch Management training in Rexburg. Participants came from Madison, Fremont, Jefferson, Clark, Teton, Bingham, and Bonneville Counties. An evaluation of the program showed the following:
After the training 92% of the producers could answer the three course objectives:
1. Where are we now?
2. Where do we want to be?
3. How do we get there?

100% wrote a mission statement, set strategic goals, and completed an income statement, balance sheets, and a financial analysis. Most completed enterprise budgets and cash flow budgets for the coming year. 100% said they would or already had recommended the program to a friend. When asked which tools they planned to continue using in the future the responses were:

Mission Statements	80%
Strategic Goals	68%
Balance Sheets	96%
Income Statements	96%
Machine Cost Program	85%
Enterprise Budgets	64%
Cash Flow Budgets	84%
Financial Analysis	84%
FinPack Program	88%

Key Items of Evaluation

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
315	Animal Welfare/Well-Being and Protection	0%		10%	
501	New and Improved Food Processing Technologies	10%		35%	
503	Quality Maintenance in Storing and Marketing Food Products	15%		10%	
504	Home and Commercial Food Service	30%		10%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	30%		15%	
722	Zoonotic Diseases and Parasites Affecting Humans	0%		10%	
723	Hazards to Human Health and Safety	15%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	3.8	0.0	2.0	0.0
Actual Paid	4.5	0.0	3.3	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
118834	0	161434	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
118834	0	161434	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
162232	0	1269469	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Members of the Food Safety Team reported 10,523 direct educational contacts through Extension and 24,847 indirect contacts. Team members published one refereed journal article and one multi-state peer reviewed Extension publication.
The Food Safety team delivered more than 300 educational programs for widely diverse audiences, totaling more than 10,500 learner contacts. Ninety-eight food preservation classes were delivered to 1,956 learner contacts during 2014, including five-week series' of food preservation classes taught in each region of the State Topics of individual workshops and presentations ranged from bacteria and sour dough to acid canning, freezing and drying foods. Team members continue to develop and deliver new programs that tie into special needs/interests of the public, including safe practices for holidays, organic foods issues, and genetically modified foods. The Food Safety team has conducted research leading to development of new food safety knowledge and best practices related to infused oils, garlic, and jerky and has incorporated those topics into their food preservation classes.
Master Food Safety Advisors and Advanced Master Food Safety Advisors participated in 51 training sessions in five counties accounting for 5,630 contact hours of instruction. Twenty-one sessions of the Preserve@Home web-based course were taught by UI Extension, including collaboration to deliver courses offered in partner states .
UI Extension taught 23 sessions and facilitated the delivery of Ready, Set Food Safe curriculum to high school students by supporting collaborating teachers delivering the program in more than 100 Idaho classrooms and more than 2,300 Idaho children participated in Germ City during 2014 at elementary schools across the state. Food Safety faculty and Master Food Safety Advisors presented displays and posters and consulted with learners at health fairs and other public gatherings throughout Idaho. The EFNEP and SNAP-Ed educational programs for limited resource families included food safety as part of their outreach to thousands of learners. UI Extension responded to more than 500 walk-in and phone-in clientele to respond to just-in-time food safety inquiries.
Food safety programs delivered to industry included HACCP, BRC, and related topics at 12 industry sites in 2014. 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, for example, consumers who call extension offices with questions about food preservation, food storage, etc. Consumer programs cover a variety of topics, for example, using slow cooker safely, preserving foods safely, storing food safely, using

labels to avoid allergic reaction, etc. Specific groups of consumers who benefit from targeted food safety information, for example, seniors, parents of young children, volunteers who cook for groups who call extension offices with specific questions, consumers who want food preservation information delivered online.

Food Safety Advisor / Master Food Preserver -- Consumers with particular interest in home food preparation and food safety topics (particularly food preservation and food storage) and in sharing the knowledge with others.

Food Service Food Safety Training -- High school students in foods classes, Adult food service workers

Hand Hygiene Education -- Elementary age children, Families and children at county fairs, adults at health fair settings.

ENP-EFNEP Food Safety -- Limited income families receiving food stamps or eligible to receive food stamps (27 counties), limited income families with children (4 counties).

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

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	7585	23507	2938	1340

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	1	7	8

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of food safety calls answered.

Year	Actual
2014	4115

Output #2

Output Measure

- Consumer food safety classes taught.

Year	Actual
2014	120

Output #3

Output Measure

- Number of new certified Master Food Safety Advisors.

Year	Actual
2014	48

Output #4

Output Measure

- Number of re-certified Master Food Safety Advisors.

Year	Actual
2014	87

Output #5

Output Measure

- Number of volunteer hours logged by MFSAs.

Year	Actual
2014	3907

Output #6

Output Measure

- Students receiving a RSFS certificate.

Year	Actual
2014	593

Output #7

Output Measure

- Participants in hand hygiene education programs.

Year	Actual
2014	2910

Output #8

Output Measure

- Number participants who completed EFNEP series of classes.
  Not reporting on this Output for this Annual Report

Output #9

Output Measure

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

Year	Actual
2014	56

Output #10

Output Measure

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

Output #11

Output Measure

- Number of classes taught by FSA-MFP volunteers

Year	Actual
2014	23

Output #12

Output Measure

- Number of food preservation equipment safety checks.

Year	Actual
2014	516

Output #13

Output Measure

- number of food safety questions categorized as potentially serious food safety issue potentially

causing illness or death

Year	Actual
2014	1807

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
9	There is a need for better processing and sterilization methods for food and food packaging.

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
2014	3317

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
One sixth of Idahoans are affected by food borne illness; some groups such as elderly, pregnant women and children are particularly vulnerable. With more and more people canning and preserving own food, risks are intensified. Extension offices receive significant number of phone calls asking for advice in home food preservation, food safety and nutrition. The Extension Office is known as a consistent and reliable source of information on Home Food Preservation in the community. Providing reliable information over the phone is the best way to reduce risks at the time when people are most likely to put safe food handling advice into practice.

What has been done
Faculty members and volunteers answer thousands of calls each year that have food safety implications. Most consumers are concerned about the safety of their home canned product. Extension completes calls by asking whether the advice given will be used by the consumer.

Results
91% of those seeking information report they will use the research based information provided to keep themselves and their families safe.

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
2014	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Consumer food preservation and storage questions are common at UI Extension Offices. UI Extension continues to be one of the only consistent sources of reliable research based information on home food preservation. The use of Master Food Safety Advisors has enhanced the ability of UI Extension to provide safe food handling information to the public.

What has been done
Fifty-two different Master Food Safety Advisor lessons were delivered by the Food Safety Team members in 2014 and 100 advisors were certified. Advisors were deployed in Extension offices and public venues where the public would have access to safe food handling expertise.

Results
Master Food Safety Advisors donated 2,100 hours of service in the Treasure Valley alone, conducting food safety equipment clinics, answering consumer inquiries, and teaching or assisting with outreach classes. Master Food Safety Advisors accounted for more than 3,000 contacts with consumers, helping reduce their individual and family risks for food-borne illnesses. Of the more than 4,000 food safety calls to Extension offices for advice, 1,800 of the questions answered were categorized as serious enough to have resulted in illness or even death had the expertise not been available to the consumer.

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
2014	593

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
About one-third of employed youth, 15-17 years of age, work in food service. Over 70% of teens work in food service as their first job. Increasingly, the foods Americans eat are prepared by others, via a variety of food service formats. Half of the total food expenditures in 2004 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
UI Extension has spent several years training high school teachers to deliver Ready, Set, Food Safe, a curriculum developed and used in collaboration with the State agency responsible to issue food service/food handler certification. UI Extension faculty continue to train new teachers and also delivers the program directly to a limited number of youth audiences.

Results
60% (593) of the students taking the course in 2014 were able to pass the competency exam with a score of 80% or better to receive the Idaho Food Handler?s Certificate. These young people will have improved opportunities to obtain jobs in food service and improved opportunities for advancement in those jobs.

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
2014	1006

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Children's health is adversely affected when they fail to practice effective and frequent hand washing behaviors. Children washing their hands at scheduled times have 24% fewer sick days than those not performing regular hand-washing practices.

What has been done
Hand hygiene was taught to youth participating in the 4-H Food Smart Families program. Since the youth would be preparing food it was essential that they know how to properly wash their hands. Germ City demonstrations and other hand washing presentations were offered in numerous elementary schools in Idaho schools (most with 50% or more students on the free/reduced lunch program).

Results
More than 1,000 youth experienced hand washing lessons in 2014. Based on previous evaluations, youth in these programs are more aware of the benefits of frequent hand washing, are more knowledgeable about when to wash their hands, and will adopt more healthful behaviors leading to fewer sick days.

4. Associated Knowledge Areas

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

723 Hazards to Human Health and Safety

Outcome #5

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #6

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

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

What has been done
{No Data Entered}

Results
{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
504	Home and Commercial Food Service
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

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.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	288

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

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
2014	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Home food preservation is increasing in popularity. In 2011, home canning product sales rose nearly 35% over the three previous years. However, many home canners are inexperienced and

may not have been trained in safe home food preservation techniques. Additionally, with new methods of distributing and gaining information such as blogs, Pinterest, etc., unsafe food preservation practices are also reappearing.

What has been done
Preserve @ Home is an online, six-week food safety and food preservation course. The course includes thirteen lessons of online and downloadable text, discussion board, real-time weekly chats, visuals, handouts, quizzes, FAQ's, and links to government websites. Extension faculty members on the Food Safety Team co-taught Preserve @ Home three times this year.

Results
Forty-one (69%) out of 59 students completed with a grade of 70% or better which indicate increased knowledge of safe home food preservation methods and will experience a reduced risk for food-borne illnesses. Most students will share this information with family, friends and community groups thus spreading the impact even further.

4. Associated Knowledge Areas

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

Outcome #9

1. Outcome Measures

There is a need for better processing and sterilization methods for food and food packaging.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Foodborne microbial pathogens cause hundreds of thousands of cases of illness and hundreds of deaths in the United States each year. These pathogens cause illnesses ranging from diarrhea and vomiting to much more serious diseases including gastroenteritis, central nervous system

disorders, severe bloodstream infections, and life-threatening illnesses such as botulism poisoning. There is a need for better processing and sterilization methods for foods and food packaging. These methods need to be affordable, robust enough to kill even the most resistant pathogens (e.g., bacterial endospores), scalable to industrial size, and have minimal harmful effects on sterilized materials.

What has been done
From work conducted in our laboratory, we have determined that inclusion of small amounts of modifier, such as hydrogen peroxide, has the potential to further enhance the lethal effects of supercritical carbon dioxide (SCCD) sterilization and lessen treatment conditions required to achieve sterilization, thus preserving the quality of treated foods.

Results
After testing various combinations of temperature, pressure, and modifier for frozen vegetables, there were mixed results of sterilization achieved and inconclusive results. While sterilization of lyophilized (freeze-dried) vegetables, proved to be successful. The lyophilization method gave promising results; so further research will be conducted in this area.

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies

V(H). Planned Program (External Factors)

External factors which affected outcomes
- Natural Disasters (drought, weather extremes, etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

A dairy ingredient processor in the Magic Valley wished to provide leadership development for supervisors and managers in conjunction with major growth taking place at the business. The UI food processing extension specialist and colleagues provided an extensive year-long training and mentoring program for over 20 employees at this firm. Improvement teams were chartered as part of the program to work on business opportunities in the areas of product quality, safety, yield, order fulfillment processes, and other business functions.

Key Items of Evaluation

As a result of this project, the processor reported in a third party survey conducted by the U.S. Department of Commerce that they experienced the following impacts: retention of $20,000,000 in sales, cost savings of $600,000, investments in equipment at $100,000,

$75,000 investment in new information systems, $75,000 investments in workforce training, $50,000 in cost avoidance, $250,000 investment in new products and processes, 2 new jobs created, and 2 jobs retained. The company has requested UI Extension and it's TechHelp department to return to conduct further training and continue to mentor improvement project teams.

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%		10%	
211	Insects, Mites, and Other Arthropods Affecting Plants	0%		30%	
213	Weeds Affecting Plants	5%		0%	
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: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	3.4	0.0	2.0	0.0
Actual Paid	4.2	0.0	2.2	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
110585	0	76022	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
110585	0	76022	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
84468	0	327958	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Forest Management team members reported 7,717 direct educational contacts through Extension and 222,338 indirect contacts. Team members published three refereed journal articles, four articles for trade publications, and 21 web page articles (including 15 for eXtension). The Forest Management team participated in projects funded by $218,211 in grants.
As part of our investment in Climate Change and Sustainable Energy, participation in a regional Northwest Advanced Renewables Alliance biofuels project is a continuing effort for Forest Management Team members. This alliance with private industry and universities is taking a holistic approach to building a supply chain to use forest residuals in the production of aviation biofuel. We also continue involvement with the Bioenergy Alliance Network of the Rockies to explore the use of diseased trees and other forest biomass as a bioenergy feedstock.
In 2014, Forest Management programs resulted in more than 6,000 educational contacts, largely centered in the forest-rich Idaho Panhandle and Northcentral Idaho regions. Education delivered for loggers included beginning LEAP courses in Coeur d'Alene and Moscow and LEAP updates in six other communities. Extension also is a contributing partner on the Idaho Pro Logger Steering Committee. Programs for forest owners included the Forestry Shortcourse (in two communities) and the Forest Owners Conference (also in two communities). The Idaho Master Forest Stewards program continues to work with forest owners to develop their skills and to provide information and education in schools and community events. As part of the Idaho Forest Stewardship program, UI Extension delivered 22 workshops and organized and presented at a dozen tours, field days and contributed to numerous other educational events as part of the program titled "Strengthening Forest Stewardship Skills" designed to strengthen forest owners' ability to improve forest health and growth. These included workshops about using GPS technology, measuring trees, forest insects and diseases, root diseases, invasive species, and other forest health topics. Significant emphasis was placed on Firewise (and other fire prevention programs), including numerous workshops and supervision of a new Firewise intern.
Panhandle forest owners can choose from over 140 forestry Extension publications available through local UI Extension offices. Extension videos on water quality, "selective" logging, and forest tax management, and can access 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 Web site, maintained by Extension forestry staff on the UI Moscow campus.
UI Extension collaborated with most Idaho forest products companies that participate in the "Sustainable Forestry Initiative" (SFI), a national effort of the American Forest and Paper Association. Partially stimulated by SFI, a statewide logger education committee recently developed the Idaho "Pro-Logger" program, administered through the Associated Logging Contractors of Idaho (ALC). Among other standards, the Pro-Logger credential requires participation in LEAP and 16 credits of continuing education annually. With the increased emphasis on providing educational opportunities for loggers, Extension has

worked to integrate logger education needs into other education programs as well.
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 on Climate, Forests, and Woodlands.

2. Brief description of the target audience

The traditional primary audiences for this topic team are family forest owners, loggers and natural resource professionals. Expansion of audiences for 2014 included outreach to fire and emergency professionals, landscape architects, Master Gardeners, teachers, and youth.

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

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	6745	220338	972	1362

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

Patent Applications Submitted

Year: 2014
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	3	0	3

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of workshops, field days, etc.

Year	Actual
2014	49

Output #2

Output Measure

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

Year	Actual
2014	1560

Output #3

Output Measure

- Number of articles in popular and trade press.

Year	Actual
2014	10

Output #4

Output Measure

- Number of web site "hits".

Year	Actual
2014	12987

Output #5

Output Measure

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

Year	Actual
2014	2862

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	Outcome (fire): Forest owners, managers, green industry professionals, and fire and emergency services personnel will be knowledgeable about and adopt best management practices that increase the health and safety of their forests and decrease catastrophic risk from wildfire in wildland and urban/interface areas. Indicator: Numbers of stakeholders indicating they will adopt recommended practices
4	Outcome (biomass): Sustainable, economically viable ecosystems that are compatible with current environmental and social issues will benefit Idaho landowners and small business entrepreneurs by the increased utilization of forest biomass. Indicator: Numbers of stakeholders indicating they will adopt recommended practices that increase biomass utilization leading to increased value of biomass harvested.
5	Outcome (forest health): Knowledge about insect and disease outbreaks and awareness of the effects of climate change on forest ecosystems increases use of recommended best management practices that benefit Idaho forests by increasing the quality and/or quantity of timber, wildlife habitat, and air and water and air quality. Indicator: Numbers of participants that have indicated they will adopt recommended practices
6	Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased job skills and maintained certification requirements. indicator: Numbers of participants indicating they will adopt various specific recommended practices.
7	Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased opportunities to receive professional development to improve job skills and maintain certification requirements. Indicator: Numbers of programs offered for formal continuing education credits (e.g., Society of American Foresters CFEs, ISDA pesticide credits, Idaho pro-logger credits, etc.).
8	Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased job skills and maintained certification requirements. Indicator: Numbers of Idaho loggers gaining or maintaining enrollment in the Idaho Pro-logger program.
9	Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased job skills and maintained certification requirements. Indicator: Numbers of foresters gaining or maintaining enrollment in the SAF Certified Forester program.
10	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.
11	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**

Outcome (fire): Forest owners, managers, green industry professionals, and fire and emergency services personnel will be knowledgeable about and adopt best management practices that increase the health and safety of their forests and decrease catastrophic risk from wildfire in wildland and urban/interface areas. Indicator: Numbers of stakeholders indicating they will adopt recommended practices

Not Reporting on this Outcome Measure

Outcome #4

1. **Outcome Measures**

Outcome (biomass): Sustainable, economically viable ecosystems that are compatible with current environmental and social issues will benefit Idaho landowners and small business entrepreneurs by the increased utilization of forest biomass. Indicator: Numbers of stakeholders indicating they will adopt recommended practices that increase biomass utilization leading to increased value of biomass harvested.

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Outcome (forest health): Knowledge about insect and disease outbreaks and awareness of the effects of climate change on forest ecosystems increases use of recommended best management practices that benefit Idaho forests by increasing the quality and/or quantity of timber, wildlife habitat, and air and water and air quality. Indicator: Numbers of participants that have indicated they will adopt recommended practices

Not Reporting on this Outcome Measure

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. indicator: Numbers of participants indicating they will adopt various specific recommended practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	790

3c. Qualitative Outcome or Impact Statement

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

What has been done
Workshops on thinning and pruning, tree planting, forest economics and log marketing, forest health, LEAP and LEAP update were offered to provide continuing education for natural resource professionals. A new program was offered on rural land purchasing attended by many realtors for continuing education. IDAH2O Master Water Stewards and the Surf and Turf programs offer

professional development credits. IDAH2O expanded the effort to train K-12 teachers. Insect and disease diagnosis and control recommendations were delivered through classes and, one-on-one, through the tree clinic.

Results

In 2013-2014, Society of American Foresters' continuing forestry education ('CFE") credit was provided for Extension programs titled: "Current Topics in Forest Health", 'Using your GPS', 'Root Disease ? The Hidden Menace', and the "Forest Insect & Disease Field Day". In response to requests from K-12 teachers, we also offer University of Idaho credit for applicable Extension programs, such as the Forestry Short Course. This allows teachers to obtain university credit for programs that help them integrate forest science into their classrooms. 40 Boundary and Bonner County Realtors improved knowledge about legal, regulatory, administrative, and scientific principles by at least 50% above pre-course tests. Realtors are better prepared to properly represent property, and intend to pass on their knowledge about water quality issues to their customers, many of whom are from far away states. Approximately 80% of attendees in LEAP workshops reported that they would, or probably would, adopt recommended practices learned. Family forest owners attending programs were similarly motivated to adopt recommended practices: 194 attendees will monitor for insect, disease, or animal damage; 173 will favor tree species that resist insects and disease; 100 will reduce unwanted vegetation; 68 will monitor/manage weedy non-native species; 60 will contact a forester for additional assistance; 51 will Identify Idaho trees 44 will thin forest trees; 41 will Improve organization of their documents for succession planning 41 will attend additional forestry education programs 40 will complete a forest management plan; 39 will use free computer mapping tools to create or revise a map of their property showing physical attributes or features; 39 will prune forest trees; 38 will use internet data sources to help manage their forest; 37 will plant forest tree seedlings 36 will contact an attorney about your succession planning 34 Improve log manufacturing; 33 will interact with an accountant about your succession planning.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
211	Insects, Mites, and Other Arthropods Affecting Plants

Outcome #7

1. Outcome Measures

Forest and Natural Resource Workforce Development: Workers in forest management related occupations have increased opportunities to receive professional development to improve job skills and maintain certification requirements. Indicator: Numbers of programs offered for formal continuing education credits (e.g., Society of American Foresters CFEs, ISDA pesticide credits, Idaho pro-logger credits, etc.).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	16

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
211	Insects, Mites, and Other Arthropods Affecting Plants

Outcome #8

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	669

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
211	Insects, Mites, and Other Arthropods Affecting Plants

Outcome #9

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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
132	Weather and Climate
211	Insects, Mites, and Other Arthropods Affecting Plants
216	Integrated Pest Management Systems

Outcome #10

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
2014	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Rural economies depend on forest products for harvest and manufacture and for forest ecosystems to provide water, wildlife, recreation, and other desired amenities.

What has been done
Several educational programs were designed to encourage landowners to better utilize their timber resources for better ecological and economic outcomes. Faculty members actively participate in a number of community forest collaborations and regional efforts aimed to encourage better land management for ecological and economic health of the area.

Results
Attendees at workshops reported their intention to apply the knowledge and skills gained. The Clearwater Basin Collaborative made progress in launching new projects on federal lands that will improve the economy and the landscape.

4. Associated Knowledge Areas

KA Code	Knowledge Area

112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
131	Alternative Uses of Land

Outcome #11

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 Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1001

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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
211	Insects, Mites, and Other Arthropods Affecting Plants
213	Weeds Affecting Plants

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Government Regulations

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Nearly 1,500 loggers have attended the 43 LEAP sessions offered annually in the Idaho Panhandle since 1994. A survey conducted with 163 loggers in the three LEAP Update sessions held in the Idaho Panhandle in 2014 revealed that
75% of LEAP attendees had been cited for FPA unsatisfactory practices prior to taking LEAP and 82% have not had one since.
51% feel Forest Practices Act unsatisfactory citations cost >$1000.
Of the 1,500 loggers in Idaho who have become LEAP certified, this data indicates that 1,125 had citations before, and 1,200 have not been cited since. In adition to the environmental benefits for complying with the law, this reduction in citations represents a conservative savings of $75,000 dollars for loggers.

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
311	Animal Diseases	0%		10%	
701	Nutrient Composition of Food	10%		0%	
703	Nutrition Education and Behavior	30%		10%	
704	Nutrition and Hunger in the Population	20%		0%	
722	Zoonotic Diseases and Parasites Affecting Humans	0%		10%	
723	Hazards to Human Health and Safety	10%		20%	
724	Healthy Lifestyle	30%		25%	
802	Human Development and Family Well-Being	0%		5%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	0%		5%	
903	Communication, Education, and Information Delivery	0%		15%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	6.9	0.0	3.0	0.0
Actual Paid	8.5	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**
250510	0	76022	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
250510	0	76022	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
353938	0	327958	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Health and Nutrition team reported 70,207 direct educational contacts through Extension programs and 88,084 indirect contacts. Team members published two refereed journal articles, one peer reviewed Extension publication, and participated in projects supported by $1,374,986 in grants.
The Health and Nutrition logged more than 1,000 individual teaching events and engagement activities in 2014. In total, these efforts reached more than 70,000 Idaho contacts. Activities of this team are grouped into several projects described below.
Faculty working on the Healthy Lifestyles/physical activity project presented in 219 individual fitness events reaching more than 9,900 contacts. Fitness events included 30 Kick Your Bootcamp classes to help with obesity issues and also pedometer fitness challenges. Additionally, 130 sessions of Strong Women were delivered for more than 1,150 contacts. Many other Strong Women sessions were taught by Extension-trained community members. Two hundred two classes and workshops about nutrition (exclusive of the SNAP-Ed and EFNEP projects) reached more than 2,000 contacts with information about healthy foods, MyPlate, etc. Fifty-eight classes reached more than 1,300 youth and adults about preparing and cooking healthy foods including cooking whole wheat breads, using fats and oils, selecting and preparing fruits and vegetables., Twenty-two educational events reached 117 learners about diet-related diseases including (mostly diabetes) and 43 events targeted overweight and obesity teaching topics such as hunger and fullness, weight-healthy kids, and portion sizes. A number of nutrition faculty have invested heavily in partnerships with local food system interests, community gardens, farmers' markets, and farm-to school projects that produced a combined 38 community-based events and reached more than 4,800 community members.
The 4-H Food Smart Families pilot project in Idaho engaged youth through 28 different educational venues including healthy living camps. The Food Smart Families project was also delivered as a major youth component of Eat Smart Idaho. 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 approximately 900 educational classes reaching more than 47,000 contacts in 30 counties. More than 27% of Eat Smart Idaho learners were identified as Hispanic and nearly 7% as Native American (the state population is 11.8% Hispanic and 1.7% Native American).

2. Brief description of the target audience

The target audience varies by program. For the program targeting low-income and underserved audience, the UI Extension reaches these individuals in 37 counties through three programs - the Expanded Food and Nutrition Education Program (EFNEP), the Supplemental Nutrition Assistance Program Education (SNAP Ed), and the Senior Extension Nutrition Program (SENP). EFNEP and SNAP

Ed, funded through USDA, target mainly adults and youth while the SENP, funded through the Area Agency on Aging (AAA), targets seniors at high-nutritional risk and most of them 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 and osteoporosis. The target audience for the diabetes classes includes adults with type 2 diabetes, pre-diabetes, or caregivers. The target audience for the osteoporosis classes includes adults with osteoporosis, osteopenia, or those who have a history of these diseases in their family and youth whose bones are still growing and developing. The target audience for the Healthy Lifestyles program includes adult and youth who have poor nutritional habits, are inactive, overweight or obese., and adults that are role models who would influence youth and others to follow a healthy lifestyle.

Idaho reaches the underserved population in 37 counties through three programs - the Expanded Food and Nutrition Education Program (EFNEP), the Supplemental Nutrition Assistance Program Education (SNAP Ed) and the Senior Extension Nutrition Program (SENP). EFNEP and ENP, funded through USDA, target mainly adults and youth while the SENP, funded through the Area Agency on Aging (AAA), targets seniors at high-nutritional risk and most of them are low-income or vulnerable. The individuals who benefit directly from these programs are low-income adults, youth, and elderly. Adults in the EFNEP, SNAP Ed and SENP learn how to eat healthy, plan menus and stretch their food dollars. Youth in the EFNEP and SNAP Ed learn healthy eating principles and physical activity, which are promoted as methods to target childhood obesity. Adults, elderly, and youth who participate in these programs will improve their eating habits, their nutritional status, food safety behaviors and decrease their level of food hunger and food insecurity.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	22604	88084	47603	7190

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total

Actual	2	8	10

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Develop Extension publications that can be used in either the low-income underseved population project, the nutrition anc chronic disease project, or the healthy lifestyles project

Year	Actual
2014	2

Output #2

Output Measure

- Submit a journal article based on research conducted in either the low-income, underserved population project, healthy lifestyles project or the nutrition and chronic disease project

Year	Actual
2014	2

Output #3

Output Measure

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

Year	Actual
2014	30631

Output #4

Output Measure

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

Year	Actual
2014	13008

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Adult SNAP Ed participants will adopt improved dietary behaviors after completing four core classes. I: Number of adult SNAP Ed participants who consume more fruits, vegetables, whole grains, or low-fat dairy products
2	O: Adult EFNEP participants will improve their diets after completing 6 core lessons.I: Number of adults that improve their diets by at least one food group (determined through pre/post 24 hour recalls).
3	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.
4	Increased fruit and vegetable intake of people attending multiple Eat Smart Idaho events. I: Number of individuals who increased fruit and vegetable intake after attending multiple Eat Smart Idaho events.

Outcome #1

1. Outcome Measures

Adult SNAP Ed participants will adopt improved dietary behaviors after completing four core classes. I: Number of adult SNAP Ed 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
2014	1363

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Poverty is of great concern to the public health community because of its influence on health status and access to care. In Idaho, 62% of adults are either overweight or obese. The rate of diabetes has increased by 38%, blood pressure by 25% and high cholesterol by 6%. The number of people who do not eat the recommended number of servings of fruits and vegetables has increased from 76% to 82%.

What has been done
SNAP-Ed Nutrition Advisors taught 2,572 adults during this year. UI faculty gathered data using 24 hour food recall surveys and food behavior checklists to understand if Eat Smart Idaho participants could improve food security and reduce risks for diet-related diseases.

Results
28-39% of adult 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. 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 showed that adults who complete a series of four basic Eat Smart Idaho classes measurably improve their eating and physical activity behavior.

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: Adult EFNEP participants will improve their diets after completing 6 core lessons.I: Number of adults that improve their diets by at least one food group (determined through pre/post 24 hour recalls).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	246

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Poverty is of great concern to the public health community because of its influence on health status and access to care. In Idaho, 62% of adults are either overweight or obese. The rate of diabetes has increased by 38%, blood pressure by 25% and high cholesterol by 6%. The number of people who do not eat the recommended number of servings of fruits and vegetables has increased from 76% to 82%.

What has been done
Staff presented the EFNEP series of lessons to 298 program participants.

Results
82% of adult 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. 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 showed that adults who complete a series of four basic Eat Smart Idaho classes measurably improve their eating and physical activity behavior.

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 #3

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
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Adult feeding practices impact young children's health and well-being in a number of ways: supporting a healthy weight, combating an obesigenic environment, managing portion distortion, managing allergies and food intolerances, preventing a negative association with food, and developing a positive relationship with food. The purpose of this research is to gain knowledge about factors influencing adult feeding practices of young children and to develop educational tools about feeding young children. Increasing our understanding of factors affecting adult feeding practices allows researchers and educators to address those factors to enhance or improve the current feeding practices used with children.

What has been done
Data has been collected on factors affecting maternal feeding practices, examination of children's self-service and changes in plate waste with an adult sitting and eating with the children. Another component of this work includes the examination of fruit and vegetable liking and intake and comparing fruit intake to vegetable intake resulting in two publications.

Results
The project has resulted in review of current materials, education, and training for graduate students. These results have been disseminated through local and national communities. A presentation was given to the Idaho Early Years Conference and an abstract publication was

completed on plate waste with an adult siting and eating with children.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #4

1. Outcome Measures

Increased fruit and vegetable intake of people attending multiple Eat Smart Idaho events. I: Number of individuals who increased fruit and vegetable intake after attending multiple Eat Smart Idaho events.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	2958

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Studies have shown that limited income individuals and families (similar to other residents) fail to follow the recommended dietary guidelines, particularly those related to fruit and vegetable consumption.

What has been done
Eat Smart Idaho Nutrition Advisors taught a series of lessons to more than 2,850 adults and more than 7,500 youth in 2014. Our goal was to teach a series of lessons and that 25% of participants who complete the series will report an increase in their consumption of fruits and vegetables.

Results
For those who completed the series of lessons, 38% of adults and 25% of youth report increased consumption of fruits and vegetables.

4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food

703	Nutrition Education and Behavior
724	Healthy Lifestyle

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (environmental factors)

Brief Explanation

significantly increased public attention on obesity and healthy eating may have had a positive impact on our results.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Two hundred forty-four women, ages 29 to 89, participated twice a week in a Strong Women Stay Young Extension program for six weeks. Participants completed six strength-training exercises and received nutrition information at each class.

Statistical analysis was used to determine if there was a significant change in the amount of weight used from Class 1 to Class 12 for the six exercises. From Class 1 to Class 12, participants reported that they significantly ($p<0.001$) increased their arm and leg strength for all six exercises. From Class 1 to Class 12, participants increased arm strength from 46 to 67 percent and leg strength from 73 to 80 percent. The average amount of weight lifted by the participating women increased with the progression of the twelve-class program, irrespective of exercise. However, the amount of weight lifted appeared to depend on the exercise. For example, at both Class 1 and Class 12, the biceps curl was associated with the highest amount of weight lifted, whereas the bent forward fly was associated with the lowest amount of weight lifted. Two activities that participants consistently reported were significantly improved, having more energy and sleeping better. Participants also reported improved abilities to get in and out of their chair or car, to complete gardening activities, and, for some, to try other physical activities because of their increased strength. These activities included golfing, kayaking, hiking up a mountain, snow shoeing, and walking more frequently.

At the end of the SWSY program, participants significantly improved their fruit and vegetable, whole grain, and low-fat dairy intake and met the Dietary Guideline recommendations for whole grains and dairy. They did not meet the Dietary Guideline recommendations for consuming 2 cups of fruit and 2.5 cups of vegetables per day. Participants commented that they ate healthier by reducing portion sizes, drinking more water, eating breakfast, reducing fat intake, and eating more whole grains. Researchers have hypothesized that individuals who are physically active may develop the cognitive resources to improve eating behaviors (Joseph et al. 2011).

Key Items of Evaluation

Two hundred forty-four women, ages 29 to 89, participated twice a week in a Strong Women Stay Young Extension program for six weeks. Participants completed six strength-training exercises and received nutrition information at each class. Participants reported that they increased their arm and leg strength by 46 to 80 percent; increased their intake of fruits, vegetables, whole grains, and low-fat dairy products; and improved their ability to

complete daily activities.

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%		10%	
102	Soil, Plant, Water, Nutrient Relationships	10%		15%	
111	Conservation and Efficient Use of Water	10%		20%	
132	Weather and Climate	10%		10%	
133	Pollution Prevention and Mitigation	10%		10%	
205	Plant Management Systems	10%		10%	
307	Animal Management Systems	10%		5%	
312	External Parasites and Pests of Animals	0%		5%	
403	Waste Disposal, Recycling, and Reuse	10%		5%	
405	Drainage and Irrigation Systems and Facilities	10%		10%	
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: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	4.2	0.0	6.5	0.0
Actual Paid	6.4	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**
149174	0	544559	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
149174	0	544559	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
134140	0	2918637	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Members of the SWWAM team reported 2,039 direct educational contacts through Extension programs and 152,468 indirect contacts. Team members published 10 articles in refereed journals, four peer reviewed Extension publications; three articles published as proceedings, and participated in projects supported by $1,264,518 in grant funds.
The Soil, Water, Waste and Air Management team is highly integrated, participating in active projects to discover new knowledge, demonstrate and transfer new technologies, and work to understand local variants that impact resource-based enterprises and the environment. Research activities include irrigation efficiency, water use efficiency, cover crop and green manure, nitrogen release and mineralization rates, composting and compost use, manure application studies, and development and testing of biofilters in a range of settings that are the subjects for field days and tours and have been communicated through professional journals. A wide variety of best practices are demonstrated on cooperator fields and were shared with producers and consultants through 24 field days and educational tours. Field and greenhouse experiments help to understand the effects of various compounds in dairy waste water on soils and crops, plant responses to organic nutrients, and composting of farm waste.
Much of our educational effort relies on field demonstrations to help growers and other stakeholders understand local conditions related to nitrogen uptake and fertilizer efficiency, use of cover crops and green manures, water quality monitoring, on-farm composting, manure application, and recycling. In addition, 85 presentations were delivered at workshops, conferences, and classes, providing education to 4,750 adult learners on industry-critical topics as well as those topics that are relevant to communities and to individual stakeholders. Forty-eight presentations for youth audiences reached 2,500 learners about topics related to water quality and ecosystem integrity. Individual faculty reported consultations and farm visits reaching more than 1,130 individual stakeholders.
The IDAH$_2$O program was delivered through 11 workshops reaching 168 stakeholders and resulted in a new cohort of IDAH$_2$O Master Water Steward volunteers who are working with watershed-scale research and monitoring programs. Faculty participated in a range of multistate activities including the animal production climate change working group, and several efforts associated with the American Society of Agricultural and Biological Engineers. Extension hosted the Idaho Nutrient Management Conference for the sixth consecutive year.

2. Brief description of the target audience

• Producers, processors and professional consultants provide input and feedback about programs, cooperate on demonstration trials and research, and participate in educational programs.

• The public affected by water and waste management issues provide input and feedback about programs and participate in educational programs.
• Local and/or state officials who either develop or implement rules and regulations related to environmental quality.
• Homeowners
• Small landowners (including but not limited to: recreational properties, small tracts of forest land, seasonal lake homes, etc.)
• Natural Resource Professionals

•

3. How was eXtension used?

use of eXtension was not reported in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	13449	150930	3061	1538

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	5	31	36

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2014	74

Output #2

Output Measure

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

Year	Actual
2014	28

Output #3

Output Measure

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

Year	Actual
2014	21

Output #4

Output Measure

- Tours and Field Days

Year	Actual
2014	12

Output #5

Output Measure

- Professional development credits awarded for participation in courses

Year	Actual
2014	12

Output #6

Output Measure

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

Year	Actual
2014	47

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	Participant surveys collect biological and human dimension measurements that help to understand the relationship between mandated and voluntary actions used to improve water quality.

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
2014	595

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Odor and gas emits from manure applied land. Both the animal farmers and neighbors care about the odor and gas emissions. Gas emissions cause N losses which reduces the manure N fertilizer value. Odors make surrounding people unhappy which negatively impact sustainability of animal agriculture. Application of Best Management Practices (BMP) and nutrient management practices are needed to reduce the environmental impact of livestock and crop agricultural activities. Pesticide sprayers not properly cleaned may lead to poor weed control and potential pesticide resistance problems. These practices impact water quality and result in excessive pesticide usage. Cover crops are targeted to producers throughout the U.S. to mitigate soil nutrient loss. However, cover crop adoption has primarily been targeted to producers in the eastern U.S., leaving a lack of research- based information on cover crop use in high-desert environments. University of Idaho Extension helped Idaho producers adopt cover crops to conserve soil and water resources and contribute to the cover crop national goal.

What has been done

BMP and other nutrient management practices were presented at the 2014 Idaho Nutrient Management Conference organized by the University of Idaho Extension. A presentation based on the evaluation results from a field demonstration of dairy manure deep injection conducted last year was delivered at the conference, also a video about dairy manure deep injection has been developed and has been shown and distributed. Seminars on current research for proper sprayer cleanout stressed the importance of good cleanout to avoid pesticide resistance and potential runoff and excessive usage. In winter of 2014, the Idaho cover crop research was presented at four UI Extension Cereal Schools in eastern Idaho where 332 participating producers were surveyed on current use and future adoption of cover crops.

Results

91% of survey respondents at the Idaho Nutrient Management Conference indicated that they will be adjusting their practices based on what they learned during the conference. Among the 150 producers surveyed in pesticide equipment classes, using post class survey and TurningPoint clickers, 70% indicated they would change their current sprayer cleanout practices. Currently, 16% of producers at the cereal schools use cover crops. After presenting Idaho cover crop research, 48-79% are willing to adopt cover crops with one-third of these producers planning to adopt by the 2015 growing season. The participating producers indicated they would adopt cover crops to achieve multiple management goals, including minimizing soil wind erosion loss, supplementing soil organic matter and nitrogen levels, and scavenging soil nutrients. If one-third of the participants implemented cover crops by 2015, an estimated 94,500 acres of cover crops would be planted in eastern Idaho.

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
133	Pollution Prevention and Mitigation
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
2014	274

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Several situations can produce runoff water volume that exceeds the capacity of the existing waste lagoon system. These include abnormally large winter precipitation, particularly on frozen soils, leaking livestock drinking water systems, excessive accumulation of sludge in the lagoon system. Land application of lagoon effluent / sludge mixtures produces strong odor downwind of the application area when surface applied. Manure injection can significantly reduce this odor. Idahoans have expressed a need for greater adult and K-12 watershed and water science education. In addition, agencies cannot keep up with adequate water quality data collection across Idaho. The Idaho trout industry is an important economic enterprise in south central Idaho. With the rapid rise in feed ingredient costs likely to continue for the foreseeable future, and the finite source of fish meal, alternative aquafeed ingredients are necessary to minimize feed costs and sustain the industry.

What has been done

Winter Wastewater Lagoon and Slurries Management' was presented at the 2014 UI Nutrient Management Conference. IDAH2O trained 70 citizen scientists in a set of water quality data collection methods related to the greatest pollution threats to public waterways. 22 of these adults were K-12 teachers, who pass on their knowledge to their students through inquiry-based educational programming and lesson planning. Based on a $359,728 WRAC/UDA grant, four years of research were conducted determining the suitability of alternative proteins for trout diets. In addition to the research, a 125 day demonstration feed trial was conducted in 2012/2013 accompanied by several consumer sensory taste tests of trout fed different feeds. A workshop for this targeted audience was held to summarize the findings and applicability of the findings.

Results

Clicker feedback following the winter wastewater session indicated that knowledge about lagoon capacities had been increased by 54% of attendees. 68% of the respondents indicated increased knowledge about odor and ammonia reduction benefits of subsurface manure injection relative to surface application. 4,573 individual water quality monitoring data points were added to the publicly accessible online interactive IDAH2O Hydrologic Information System. For every K-12 teacher enrolled in the IDAH2O program, a minimum of 30 K-12 students are taught water science, and participated in hands-on, investigative projects that result in development of 21st Century Skills. Trout growers can be confident that alternative proteins can be used for trout diets without negatively impacting performance and quality; and they have the tool to compare returns over feed cost for any feed, thus enabling them to make informed decisions regarding feed, which accounts for 50 ? 70% of production costs. Feed manufacturers have received new open feed formulas based on the experimental diets that they can use or modify to manufacture alternate protein trout feed based on prevailing ingredient costs.

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

Participant surveys collect biological and human dimension measurements that help to understand the relationship between mandated and voluntary actions used to improve water quality.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Over 90% of Pacific Northwest residents consider clean rivers and effective river basin management to be important issues in
the Pacific Northwest. The large Columbia-Snake River Basin provides irrigation water to 5,000,000 ha, water for navigation,
drinking water to more than 5,000,000 people and electricity (hydropower) to more than 8,000,000 people within Washington,
Idaho, Oregon and British Columbia. The purpose this work is to document public perceptions, attitudes, and concerns about the Columbia-Snake River Basin.

What has been done
Two identical statistically designed regional surveys were conducted in
2011 and 2014.

Results
Approximately 98, 98, 90, 80, 80 and 54% of the survey respondents considered the Columbia-Snake System important for providing water for mountain snowpack, power generation, agriculture, recreation, drinking, and commerce, respectively. A majority of the public also rated quality and quantity aspects of the river system as good or excellent. A majority of residents in 2011 (52.0%) and 2014 (62.1%) felt that climate change should be addressed regardless of cost. The percentage of survey respondents that believed scientific merit of climate change to be good or overwhelming
increased from 47.1% in 2011 to 71.1% in 2014. The loss of mountain snowpack was the most

frequently cited critical issue
associated with climate change in the Columbia-Snake River Basin. A majority of urban and rural residents were worried
about the impact of climate change on agriculture - particularly irrigated agriculture. Compared to 2011 respondents to the
2014 survey were more concerned about climate change and its potential impact on both dryland and irrigated farming.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
132	Weather and Climate

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other ()

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

With the rapid rise in feed ingredient costs for aquaculture likely to continue for the foreseeable future and the finite source of fish meal, alternative aquafeed ingredients have been identified as necessary to minimize feed cost. However, a lack of information regarding the identification of suitable alternatives and questions regarding the ability of alternative protein diets to support optimal growth, health and product quality was identified by industry partners as a hurtle to adoption. To address this lack of information in this WRAC funded project, novel and commercially available alternate ingredient were identified and analyzed for their available nutrient content. Subsequently various combinations of these ingredient were fed to rainbow trout in eight laboratory feeding trials and one on-farm trial wherein various growth efficiency, health and product quality response variables were documented. Data from these studies demonstrated that fishmeal protein is not necessary in rainbow trout feeds and that an assortment of alternative ingredients including plant-based proteins and animal protein can be used in combinations to meet the nutritional needs of the fish. These data thus support that fish meal levels in commercial feeds can be reduced without impacting performance when suitable alternatives and supplements are used. The studies also demonstrated that total protein can be reduced in the feeds from 45 to approximately 38 CP without impacting growth when rainbow trout diets are formulated on an available amino acid basis and amino acid targets are met. These results have been presented in scientific and trade meetings and communicated to feed industry representatives. Results from the studies have also garnered national attention through newspaper articles and industry webpages. An improved understanding of a wider variety of ingredients now available in the digestibility

database can improve formulation security and help buffer feed price fluxes by providing nutritionists a variety of ingredients to choose from while still meeting nutrient demands when competition for high protein ingredient occurs and/or a currently utilized ingredient becomes unavailable. Balancing limiting dietary amino acids on an ideal protein basis can reduce total protein levels in feeds while maximizing protein retention and minimizing feed conversion ratios. Ultimately, this will minimize environmental impact through reducing feed waste and total solids in waste streams as well as nitrogen excretion by the fish.

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%		15%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	10%		10%	
204	Plant Product Quality and Utility (Preharvest)	10%		5%	
205	Plant Management Systems	20%		15%	
212	Diseases and Nematodes Affecting Plants	10%		10%	
216	Integrated Pest Management Systems	10%		10%	
503	Quality Maintenance in Storing and Marketing Food Products	15%		10%	
603	Market Economics	5%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	5.0	0.0	10.0	0.0
Actual Paid	4.0	0.0	17.0	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**
157505	0	286779	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
157505	0	286779	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
115833	0	4484638	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Members of the Potato Team reported 8,129 direct educational contacts through Extension programs and 112,328 indirect contacts. Team members published 10 articles in refereed journals, one peer-reviewed Extension publication, and participated in projects supported by over $4 million in grants.
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 continues to be an important topic for stakeholders and was included in the portfolio of research and Extension activities targeting diseases and pests. Work continued on Potato Viruses X and Y, wireworm, Late Blight, Early Blight, potato psyllids, aphids and Colorado potato beetles. 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. Field demonstrations help growers and other stakeholders understand the impact of various planting and pest management practices and irrigation needs and strategies. 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. Spanish language workshops were delivered for the fifteenth consecutive year at the potato conference; attendance in the Spanish workshops has grown from fewer than 40 to more than 150 in 2014.
Dozens of workshops and articles in trade publications, presented or written by UI faculty, brought information to the industry about potato bruising and storage, costs of production, taxes, pathogens and disease control, best- irrigation, fertilization and fumigation practices, and many more. Faculty also produced an array of refereed and Extension publications, largely focusing on disease-related issues including resistant cultivars, weather-based management, and assessment of pathogen risks. 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.

2. Brief description of the target audience

Target audiences are potato producers, field agronomists, consultants, and industry representatives..

3. How was eXtension used?

use of eXtension was not reported in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	9329	112143	80	185

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

Patent Applications Submitted

Year:	2014
Actual:	1

Patents listed
Yukon Nugget - Potato - PVP Number 201400308

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	16	30	46

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Seminars, workshops, field day presentations.

Year	Actual
2014	65

Output #2

Output Measure

- Trade Journal Articles.

Year	Actual
2014	21

Output #3

Output Measure

- Field Days.

Year	Actual
2014	2

Output #4

Output Measure

- Individual Consultations.

Year	Actual
2014	285

Output #5

Output Measure

- Graduate Students.

Year	Actual
2014	2

Output #6

Output Measure

- Workshops conducted.

Year	Actual
2014	16

Output #7

Output Measure

- Email Information Dissemination.

Year	Actual
2014	695

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
2014	82

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Unusually wet weather in early August led to late blight affecting many growers in the eastern part of the state in 2014. 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 published guidelines for growers on how to control late blight in Idaho. A newsletter article 'Checklist for Managing Late Blight Approaching Harvest and Into Storage' was disseminated to at least 500 growers and agronomists in the state. Faculty helped diagnose samples brought in to the lab and provided on-site information on the disease cycle and recommended fungicides for the management of the disease.

Results
Feedback from industry personnel indicated at least 20 growing operations followed the recommendations outlined in the checklist newsletter. Growers with diseased plants samples with suspected late blight were provided with rapid diagnostics to determine if their samples had the disease. All growers bringing in diseased samples were provided with information on how to manage the disease.

4. Associated Knowledge Areas

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

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

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
2014	280

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Disease and seed potato problems have the potential to negatively impact all segments of the Idaho industry. Seed and commercial growers as well as fresh and process potato buyers are concerned about product quality in both raw and finished product. Effective insect pest management depends upon timely and accurate identification of target pests.

What has been done
Pest alerts were published on the potato pathology twitter account @potatodiseases with links to information on how to manage disease problems. Twitter was also used to alert growers to the discovery of psyllids in Idaho and whether or not they were positive for the zebra chip bacteria. The PNW PestAlert.net remains an important notification instrument.

Results
Rapid publication of information on disease outbreaks allowed growers to take management decisions to help control the problem, such as application of additional protective sprays. In some cases information was used to delay or prevent application of pesticides. In the 2013 evaluation for the PNWPestAlert.net website, 37% 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 the pest.

4. Associated Knowledge Areas

KA Code	Knowledge Area
212	Diseases 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
2014	2002

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Potato virus Y can lead to yield and quality reductions in commercial potatoes. Seed and commercial growers as well as process and fresh potato buyers are very concerned about internal tuber defects caused by the new tuber necrotic strains of this virus. Bacterial ring rot causes significant quality reduction in commercial potatoes due to significant decay that occurs with infection. This causes storage management issues.

What has been done
Extension presentations and magazine articles were delivered stressing the importance of very low levels of potato virus Y in the seed potatoes used for both seed and commercial production. Information on sanitation and BRR biology was extended to the potato industry via workshops, presentations, newsletters, articles, emails, phone calls and other extension materials.

Results
The amount of PVY in Idaho seed potatoes has gone down by more than 20% over the last 4 years. The number of submitted cultivars infected with BRR decreased from 7 in 2013 to 3 in 2014 indicating a shift in the number of seed lots infected with the disease. The number of fields infected remained the same as last year although the severity appears to be lessened.

4. Associated Knowledge Areas

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

202	Plant Genetic Resources
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
212	Diseases 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.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Idaho has a large and diverse crop production agriculture, with a significant impact on the state and national economies. The
State of Idaho is the largest producer of potatoes in the U.S., with about one-third of the national production and more than 30%
of the acreage in 2008. Other significant crops grown in Idaho include sugar beet, dry beans, peas and other cool season food
legumes. In all these crops, virus diseases cause significant losses and require attention with respect to monitoring viruses and
managing disease problems. Understanding the infection cycle, virus-host interactions, transmission, epidemiology, and strain
composition of viruses affecting major Idaho crops facilitates development of more profitable and sustainable management
practices for crop protection and production.

What has been done
Hypersensitive resistance (HR) to Potato virus Y (PVY) in potato (Solanum tuberosum) is conferred by strain-specific N genes. Two such genes have been identified in potato so far, Nytbr conferring HR to PVYO, and Nctbr conferring HR to PVYC. A third, putative gene Nztbr was proposed to confer HR against a distinct strain PVYZ. However, due to the scarcity of the PVYZ isolates of PVY, no formal proof of the monogenic nature of this new gene, Nztbr, was available until now. We reported on a genetic study of the Nztbr inheritance in three crosses between

cultivars Maris Bard (Ny:Nz) and King Edward (ny:nz), and
Maris Bard (Ny:Nz) and Russet Norkotah (ny:nz). A fully-sequenced PVYZ isolate, L26, was used to screen the parents and progeny for a virus-induced HR phenotype in foliage. Based on the phenotypic analysis of 203 progeny, segregation of HR phenotype in the PVYZ-infected plants was found to be 1:1, indicating a monogenic, dominant nature of the Nztbr gene. Since the PVYZ strain includes PVYNTN isolates associated with tuber necrotic ringspot disease (PTNRD) in susceptible potato
cultivars, the Nztbr gene represents a valuable source of HR against PTNRD-inducing PVY isolates. This is the first demonstration that Nztbr is a single, dominant N gene in potato conferring resistance to the PVYZ-NTN strain.

Results
Graduate students were trained in various virus research, published peer-reviewed papers, and presented results at professional meetings and to growers at conferences and trade shows.

4. Associated Knowledge Areas

KA Code	Knowledge Area
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
205	Plant Management Systems
212	Diseases and Nematodes Affecting Plants
216	Integrated Pest Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes
- Other ()

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Post-harvest application of phosphorous acid to potatoes loading into storage for late blight management was a novel concept initiated by University of Idaho over 13 years ago. This year the recommendation for this application was made to growers plagued with tuber late blight and testimonials indicated a majority of the growing operations in the affected area used phosphorous acid going into storage. Major processors were also recommending it to all their growers in those areas. A management solution initiated and developed by the University of Idaho was instrumental in minimizing the impact of late blight on the stored crop.

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 Community Food Systems

☑ Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	10%		0%	
102	Soil, Plant, Water, Nutrient Relationships	15%		0%	
111	Conservation and Efficient Use of Water	10%		0%	
112	Watershed Protection and Management	5%		0%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		30%	
202	Plant Genetic Resources	5%		20%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		20%	
205	Plant Management Systems	20%		30%	
212	Diseases and Nematodes Affecting Plants	5%		0%	
213	Weeds Affecting Plants	10%		0%	
602	Business Management, Finance, and Taxation	5%		0%	
604	Marketing and Distribution Practices	15%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	3.1	0.0	1.0	0.0
Actual Paid	3.7	0.0	3.5	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**
85992	0	51334	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
85992	0	51334	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
49546	0	895454	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Small Farms and Community Systems team reported 6,605 direct educational contacts through Extension programs and 73,867 indirect contacts. Team members produced five research reports, two articles published as part of proceedings, and three articles in trade publications. Members participated on projects supported by $91,766 in grants.
The Small Acreages and Emerging Specialty Crops team delivered intensive educational programs to more than 5,000 adult and 1,500 youth learners focusing on small farms, community food systems, direct marketing, and farm business management. Efforts to address the sustainable use of lands and natural resources included the 8-week "Living on the Land" and "Small Farming and Ranching" courses (delivered in two counties). Elements of the "Cultivating Success" course were incorporated into a variety of programs including the 7-week course "Planning for Profit", and programs about starting and planning your business and GAP food safety regulations. Individual workshops and workshop series' were delivered for clientele on topics ranging from sustainable small farming and use of social media to vermicomposting and beekeeping.
Farmers Market and direct marketing were addressed in a variety of programs including a statewide webinar for farmers market vendors, workshops for market managers, rapid market assessment aimed at farmers' market vendors and producers, and support and facilitation for a number of market administration committees. Other educational events for small acreage farmers and ranchers were delivered through several conferences including the Women in Ag and Growers Own conferences and as individual workshops covering topics such as sustainable animal and vegetable production, permaculture, and producer-school connections.
There is growing interface among our small farms, horticulture, and nutrition education teams to deliver programs that intersect local food systems, community vitality and nutrition and health. UI faculty members collaborated in four community food system/food hub projects, working with community advocates from within the State (and adjacent state partners) to evaluate food systems and investigate potentials for food hubs. Others worked with their 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

Established and prospective small-acreage, specialty crop producers, processors, and marketers. Small acreage landowners who desired to learn how to manage their land in a sustainable manner to protect natural resources.

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?

use of eXtension was not reported in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	5042	72579	1563	1288

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	1	0	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Small Farms / Marketing Conference

Year	Actual
2014	1

Output #2

Output Measure

- Small Acreage Farming Course.

Year	Actual
2014	1

Output #3

Output Measure

- Small Acreage Business Planning / Entrepreneurship Course.

Year	Actual
2014	2

Output #4

Output Measure

- Land Stewardship course.

Year	Actual
2014	3

Output #5

Output Measure

- Tours, Demonstrations and Field Days

Year	Actual
2014	3

Output #6

Output Measure

- Farmers Market workshop with ISDA

Year	Actual
2014	2

Output #7

Output Measure

- Workshops and Shortcourses

Year	Actual
2014	4

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	More privately owned land in Idaho is being managed to reduce negative environmental impacts and conserve natural resources. Indicator: Number of acres managed by participants in Extension small acreage programming.
6	Small acreage producers start or maintain a sustainable business enterprises that contribute to local food systems as a result of participating in University of Idaho Extension programming. Indicator: Number of course graduates and program participants actively marketing their farm products at farmers markets, through CSAs or other direct or semi-direct marketing channels.
7	Producers will adopt highly efficient rootstocks and tree orchard architectures favorable to both increased production and fruit quality. Indicator - increase in new orchard architectures.

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
2014	610

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Informed, educated producers and landowners are more likely to care for their land sustainably, avoid risk in small farm enterprises, and add to the quality of life in rural and urban communities. There is a great need for high quality, research based information to serve this audience, many of whom are new to farming or land stewardship.

What has been done
In addition to the variety of classes described above, University of Idaho Extension and program partners in Southwestern Idaho provided numerous opportunities for learning to take place. UI faculty co-hosted a Farmers' Market Vendor webinar for statewide audiences, and collaborated with the Xerces Society, NRCS and NCAP to present training for growers interested in protecting and promoting beneficial insect habitat on their farms. Members of the Small Acreages and Emerging Specialty Crops team assisted and recruited visitors to the UI Parma Pomology Program Fruit Field Day and hosted sites for women in agriculture conferences.

Results
Over 450 attendees at these programs increased their knowledge on topics related to small acreage land stewardship and sustainable small farm enterprises. Participants also learned new strategies that they planned to put into place to benefit their land and their enterprises into the future.

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	Diseases 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
2014	26

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Incorporating Best Management Practices helps landowners to look at their property and enhance it as a whole systems approach which looks at social, economic and environmental aspects of land management.

What has been done
An eight week LOTL course was delivered to 15 participants who together manage 55 acres of property. Topics taught to these participants included; water, irrigation, soil, weed, pasture, marketing and pest control.

Results
After completing the LOTL class, site visits are conducted to gather further information. There had been a total of 29 different best practices applied combining for 78 instances of improved management on participant?s property. Most influential being soil erosion and weed management best 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
212	Diseases 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
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Sustainable small farms protect their natural resources, are economically viable, and model practices that are socially just. New growers are often influenced most significantly by their peers.

What has been done
Past participants of Sustainable Small Acreage Farming and Ranching, and Living on the Land classes were employed to host workshops/tours and explain or demonstrate adoption of sustainable practices in their operations in 2014.

Results
Class participants rated graduate speakers and tours "valuable" to "very valuable" in helping them to achieve their goals. They also continue to have contact with some of the farmer mentors, which encourages peer-to-peer learning. The individuals who returned to teach and host have also reported increased traffic at their market booths/farm businesses as a result of their increased visibility through participation in our classes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
202	Plant Genetic Resources
205	Plant Management Systems
212	Diseases and Nematodes Affecting Plants
213	Weeds Affecting Plants
604	Marketing and Distribution Practices

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

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	5508

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Most of the nation?s land base is in individual private ownership. Helping individuals better manage their land for economic and ecological benefits is a benefit to landowners and the larger

society. Many of the students in our small farm classes are owners or managers of small acreages. These landowners can have a big impact on the conservation of natural resources with the new knowledge learned in our courses.

What has been done
Extension delivered a workshop series on small scale agriculture and landscaping with native plants, a small acreage stewardship series, an on-line Sustainable Small Farming and Ranching course taught as 8 week webinar series with curriculum in Moodle format, a nine week on-line Planning for Profit course, and an eight week Living On The Land course. Dozens of individual workshops, site visits and consultations contributed to this effort.

Results
73 students in two on-line classes which focused on sustainable production and financial management are currently farming 5,153 acres and applying new knowledge to conserve their natural resources.

4. Associated Knowledge Areas

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

Outcome #6

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	21

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Empowering individuals and families to create sustainable farm-based enterprises is an important goal of our programs. These businesses contribute to the local economy and to food security in our communities.

What has been done
Through conversations and follow up interviews with past program participants, visits to the local Farmers' Markets and farm stands, we are able to identify numerous graduates of our programs who start or sustain small acreage farm-based businesses.

Results
At least 17 graduates of our classes, workshops and programs are actively marketing farm products through area Farmers' Markets, Community Supported Agriculture Programs or direct to restaurants, schools or other marketing channels. Two current farmers in the Advanced Business Planning program expanded their value added production and marketing venues in the past year. Another former student has started her cheese business after taking both classes. A retired couple who took the course has joined their daughter and son-in-law to expand their integrated farm business.

4. Associated Knowledge Areas

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

Outcome #7

1. Outcome Measures

Producers will adopt highly efficient rootstocks and tree orchard architectures favorable to both increased production and fruit quality. Indicator - increase in new orchard architectures.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	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 identify ways of increasing production while maximizing limited acreages and maintaining quality. This can be accomplished by more efficient land use, varying tree orchard architectures, and developing highly efficient rootstocks thereby increasing the output/input ratio.

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' apple trees were planted in 2010. The preliminary results in 2014 have been extremely successful. Trees with Tall Spindle training, either with Bud9 or Nic.9 rootstock, produced higher
yield and larger fruit with superior quality as compared to those produced under conventional systems. Some rootstocks are performing exceptionally well under 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
205	Plant Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other ()

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

A retrospective evaluation was given to participants after the Living on the Land class. The evaluation showed significant (82%) knowledge gained in preparedness, understanding skills, and the ability to change techniques to improve their land.
This evaluation was then followed up by Living on the Land site visits. These found that 82 best management practices were implemented on everyone's combined property.
Increasing and utilizing BMP's for better land management increase several factors of social, economic and environmental improvements for the community as a whole.

Key Items of Evaluation

Within our Gem County Food Hub working group, we received a USDA Rural grant and Commerce grant to conduct a Food Hub Feasibility Study. That study was completed in September 2014, with results indicating there is enough demand to make a Food Hub sustainable in the Gem Community. We are now working toward facility preparations and grant work to continue moving forward with our Food Hub ideas.

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	15%		10%	
111	Conservation and Efficient Use of Water	10%		10%	
201	Plant Genome, Genetics, and Genetic Mechanisms	5%		9%	
202	Plant Genetic Resources	10%		9%	
205	Plant Management Systems	15%		10%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%		10%	
212	Diseases and Nematodes Affecting Plants	10%		10%	
213	Weeds Affecting Plants	10%		10%	
215	Biological Control of Pests Affecting Plants	5%		9%	
216	Integrated Pest Management Systems	10%		9%	
503	Quality Maintenance in Storing and Marketing Food Products	0%		2%	
511	New and Improved Non-Food Products and Processes	0%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	4.2	0.0	6.5	0.0
Actual Paid	3.0	0.0	10.0	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**
108955	0	465396	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
108955	0	465396	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
118431	0	4878573	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

SBMC Team members reported 5,309 direct educational contacts through Extension and 114,925 indirect contacts. Team members published two articles in refereed journals, three peer reviewed multi-state Extension publications (PNW), and participated in projects funded by $382,155 in grants.
The sugar beet and minor crops team integrated field research, demonstration, and outreach education primarily related to crop pests, diseases, and weeds, and to irrigation systems and soil moisture relationships. Studies exploring relationships between irrigation, soil moisture, and soil-borne pathogens such as rhyzomania and rhyzoctonia are continuing in multiple settings. Field studies and tours were conducted in collaboration with growers and in UI Agricultural Experiment Station fields to study onions, sugar beets, dry beans, and sweet corn, to evaluate green manures and compost manure applications, and to test sugar beet varieties under a range of conditions. In northern Idaho, variety tests were established for 18 varieties of pea, 15 chickpea, and 15 winter pea varieties. Winter legume trials were also established to study cover crop attributes.
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 studied and reported include onion thrip, Rhizoctonia, Aphanomyces, leaf minor and curly top.
Significant efforts were devoted to weed management, pesticide registration, development and extension of knowledge about IPM tools, and soil moisture/irrigation protocols influencing pests and diseases.
New and practical information was shared through 54 Extension workshops, at commodity schools, and through presentations at grower and industry meetings and conferences. Faculty participated in a dozen regional conferences and commodity schools. PNW pest management handbooks were updated and IR-4 pesticides were evaluated as part of the regional project. Faculty prepared a host of Extension publications (for example the 2013 Small Grain and Grain Legume report) and research publications explaining their findings to end users and to other scientists.

2. Brief description of the target audience

Growers of minor crops in Idaho and western U.S., EPA, USDA, ISDA and other western departments of agriculture, regional land grant institutions, public interest groups, crop advisers and farm workers throughout Idaho 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 company fieldmen and agronomists, chemical companies, seed companies and consultants).

3. How was eXtension used?

use of eXtension was not reported in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	5077	114925	232	0

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

Patent Applications Submitted

Year: 2014
Actual: 1

Patents listed
201400386, White Gold (Mustard, white)

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	5	18	23

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Extension workshops, schools and conferences.

Year	Actual
2014	15

Output #2

Output Measure

- Field tours and demonstration projects.

Year	Actual
2014	11

Output #3

Output Measure

- Applied and basic laboratory and field research experiments

Year	Actual
2014	51

Output #4

Output Measure

- Professional invited presentations.

Year	Actual
2014	8

Output #5

Output Measure

- Presentations at Extension Workshops, schools, and conferences

Year	Actual
2014	40

Output #6

Output Measure

- Sugarbeet costs and returns estimates

Year	Actual
2014	1

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	Growers use best practices in regard to irrigation management and nutrient use efficiency in the production of sugar beet and minor crops. Indicator: Number of Idaho growers indicating adoption of recommended practices (follow-up survey data).
4	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. Indicator: Number of participants who demonstrate increased knowledge following Extension education programs.
5	Improving the economics of biofuel production, biopesticide development will promote and enhance organic and low input fruit and vegetable production. Indicator: Producers will increase oilseed crop acreage.

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
2014	388

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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	Diseases 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).

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	23

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
212	Diseases and Nematodes Affecting Plants
213	Weeds Affecting Plants

Outcome #3

1. Outcome Measures

Growers use best practices in regard to irrigation management and nutrient use efficiency in the production of sugar beet and minor crops. Indicator: 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
2014	9

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Excess N fertilizer applied to sugar beets may cause several problems; it decreases sugar beet quality, it can negatively impact surface and groundwater, it negatively impacts sugar beet economics. Overwatering sugar beets also has negative impacts; it can cause diseases and leach nutrients out of the root zone.

What has been done
In conjunction with AMSCO field consultants, soils tests were taken prior to the sugar beet growing season and soil moisture monitoring equipment was installed in growers? sugar beet fields in order to increase nutrient and water use efficiency.

Results
Cooperating sugar beet growers used data from the soil moisture monitoring equipment to help them schedule irrigation. Consequently, they used less water than they normally use and the incidence of disease was reduced.

4. Associated Knowledge Areas

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

Outcome #4

1. Outcome Measures

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. Indicator: Number of participants who demonstrate increased knowledge following Extension education programs.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	301

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Pest management and crop protection issues are extremely important from economic, environmental and human health perspectives. Based on University of Idaho Crop Enterprise Budgets, pesticide expenses range from 18% to 39% of the operating costs of the high valued crops; alfalfa seed, onions, potatoes, and sugar beets. Using an IPM based decision making process for pesticide applications may help reduce overall costs to the producer and pesticide impacts to workers and the environment. Water and energy use in sugar beet irrigation can be reduced by proper irrigation scheduling and by proper irrigation equipment maintenance. Over-irrigation can increase disease pressure while minor under-irrigation will reduce sugar yield only slightly.

What has been done
Educational programming was included in the December 2013 UI Snake River Sugar Beet Conference and at the August 2014 Amalgamated Sugar Company Ag Symposium. Field tours and surveys were conducted in more than 20 fields in order to evaluate and detect irrigation, nutrient & pest issues. We educated growers on diseases, soil crusting, frost damage, nutrient balances, over-watering and a need for best management practices. Two studies evaluating the effect of irrigation level on sugar yield were conducted at the Kimberly R&E Center. One study also looked at irrigation interaction with tillage system, weed and insect populations, and the other with disease and insect population. PNWPestAlert.net was used to quickly disseminate research based pest control information relevant to immediate threats to Treasure Valley crops. Articles were written and published in the trade magazine Sugar Producer in 2014.

Results
Participants at the conferences strongly indicated the value of new information that they received. Producers accessing PNW PestAlert.net not only received new knowledge, but also increased their use of IPM strategies to control pests, such as using beneficial insects, installing pheromone traps, rotating chemistries, etc., by 25% (2013 data).

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	Diseases and Nematodes Affecting Plants
213	Weeds Affecting Plants
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems

Outcome #5

1. Outcome Measures

Improving the economics of biofuel production, biopesticide development will promote and enhance organic and low input fruit and vegetable production. Indicator: Producers will increase oilseed crop acreage.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Brassicaceae oilseed crops including rapeseed (Brassica napus), mustard (Brassica juncea and Sinapis alba), and camelina
(Camelina sativa) exhibit rotational and environmental quality benefits making them excellent choices as rotational crops for the
production of advanced liquid biofuel feedstocks. Substituting a mustard crop for a pulse crop can significantly reduce the
amount of herbicide used in the cropping system. Brassicaceae crops are extremely competitive with most common annual
weed species, reducing the need for chemical weed control in the crop. Natural chemicals produced by Brassicaceae plant
tissues also appear to provide pest control benefits that exceed those expected from an average break crop. Including
Brassicaceae crops in a rotation has a number of other advantages. Increased plant available N has been measured in soils
following mustard crops equal to that typically measured after a legume. Brassicaceae crops are highly drought tolerant and
require less water than small grains. Although Brassicaceae species afford the aforementioned

benefits with respect to
agroecosystem sustainability and produce excellent quality oils for advanced biofuel feedstocks, acreages are limited by low
financial returns to growers. An increased financial incentive to grow Brassicaceae oilseed crops will only occur if the oils and
associated co-products command higher prices. Given the competing price of petroleum feedstocks, the value of oils produced
from Brassicaceae species is unlikely to increase in the foreseeable future. Thus, the only way to develop an economically
viable, regionally significant liquid biofuels industry based on oilseeds is to increase co-product value.

What has been done
Two different extraction procedures were designed to extract pesticidal compounds from mustard meals. The procedure for
Sinapis alba involves hydrolyzing the glucosinolate precursor during the extraction to produce a pesticidal formulation. The
procedure for Brassica juncea involves extracting intact glucosinolates that do not have biological activity until activated by
hydrolysis. Bioassays conducted to determine phytotoxic compounds in mustard meal extracts from S. alba indicate multiple
herbicidal compounds including SCN- as well as two additional compounds. The additional compounds have not previously
been implicated in mustard meal phytotoxicity. Overall herbicidal activity is controlled by synergistic and additive impacts of
these three compounds. An ion chromatographic method to measure these herbicidal compounds was developed decreasing
the time required for analysis. Conditions required activating pesticides in B. juncea extracts were optimized including pH and
the ratio of extract to enzyme. Extracts can be stored inactive until the time of use, thus increasing user safety.

Results
Our overall goal is to ensure economic viability of liquid biofuel production from Brassica napus, Brassica juncea, Sinapis
alba, and Camelina sativa by developing enhanced-value co-products from the seed meals remaining after oil expression.
Currently, our most promising candidate for commercial adoption is a bioherbicide for weed control in rice. We will continue efforts using S. alba seed meal and expand on this research by developing efficacious biopesticidal formulations for a broader range of plant pests. We will extract glucosinolates from seed meals, utilize the
separated glucosinolates as biopesticides, and increase the nutritional value of the residual seed meals for animal feed.
Glucosinolate extracts possess inherent advantages as biopesticides compared to the seed meals including greater ability to
manipulate active ingredient additions to achieve efficacy, improved transportability, and ease of application. Our specific
objectives include the following: 1) develop an economically viable bioherbicide for rice; 2) develop extraction procedures for
glucosinolates from Brassicaceae seed meals; 3) optimize biopesticidal formulations to maximize biopesticide release; 5)
screen biopesticides for activity using bioassay procedures. Our specific outputs will be

biopesticides targeting pests in organic crops.

4. Associated Knowledge Areas

KA Code	Knowledge Area
215	Biological Control of Pests Affecting Plants
503	Quality Maintenance in Storing and Marketing Food Products
511	New and Improved Non-Food Products and Processes

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (climate)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Evaluation of the PNW Pest alert network was conducted using an online survey attached to the website. Responses to the survey indicate that:

- Subscriptions to the pest alert network have increase nearly 10% over last year.
- Pesticide applications have been reduced by 12%
- 26% of the time, applications were more effective and timely
- 37% increase in field scouting before applying a pesticide

Key Items of Evaluation

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	25%		0%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	25%		0%	
806	Youth Development	50%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	14.4	0.0	0.0	0.0
Actual Paid	19.3	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
518148	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
518148	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
762723	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Project 1: 4-H Science

Youth and adults will increase science processing skills through current 4-H projects. Animal science programs and projects will integrate science processing skills and quality assurance practices. Target areas include robotics at the county, district and state levels and animal evaluation and livestock skill-a-thons at the local and state levels.

Project 2: Healthy Living

Youth and adults will increase knowledge and practice of healthy living skills by focusing on think-your-drink activities to reduce sugar and calorie intake and redirect participants to increasing fruits, vegetable, whole grains and low-fat dairy foods.

Project 3: Youth and Adult Leadership and Volunteer Development

Develop youth and adult leadership and citizenship skills through recruiting, training and retention programs at the local and state level.

Project 4: Reaching Underserved Audiences

Continue outreach to underserved youth and adults in the University of Idaho 4-H Youth Development programs through afterschool and targeted programs.

2. Brief description of the target audience

- Idaho youth, ages 5-18
- 4-H Volunteers
- Adult and youth volunteers
- Teachers and Out-of-school instructors
- Youth in school enrichment and afterschool programs
- Low income youth and families
- Youth-at-risk
- Youth Development staff
- Community Leaders
- Hispanic youth and adult volunteers
- American Indian youth and adult volunteers
- Children and families with military ties

3. How was eXtension used?

{No Data Entered}

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	47024	248537	91253	62188

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	2	3	5

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
2014	33610

Output #2

Output Measure

- Number of volunteers in educational classes and workshops.

Year	Actual
2014	6015

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
2014	348

Output #4

Output Measure

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

Year	Actual
2014	1115

Output #5

Output Measure

- Number of 4-H clubs or groups.

Year	Actual
2014	1584

Output #6

Output Measure

- Number of youth attending statewide 4-H events.

Year	Actual
2014	1513

Output #7

Output Measure

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

Year	Actual
2014	2156

Output #8

Output Measure

- Number of hits on the web site each year.

Year	Actual
2014	19329

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	Youth and adults will learn how their processing skills and practices affect the consumer acceptability of the product/project. Indicator: Knowledge increase and skill gained
3	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.
4	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.
5	Increase youth and adult volunteer participation and knowledge in Essential Elements and experiential learning methodology. Indicator: Total number of youth and adults who attend training and demonstrate knowledge gain.
6	The total number of youth and adults who assume leadership roles will increase. Indicator: The total number of youth and adults trained in communication and teamwork skills.
7	Increase support for culturally appropriate programs. Indicator: Number of grants or other funding sources received specific to reaching underserved audiences.
8	Policy changes and cultural climate support to create acceptance of non-traditional programs and their participants. Indicator: Number of faculty and staff involved in making a systematic review of institutional structure and cultural climate through the lens of underserved audiences.
9	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

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
2014	25

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
There are several developments for engaging youth in authentic STEM activities and in how teachers (leaders) should provide STEM learning opportunities for youth (e.g., Inquiry-based Instruction). 4-H Professionals need training in this area to enhance their abilities to conduct their jobs and provide the best STEM learning opportunities for their clientele.

What has been done
The 4-H Specialist developed and conducted seminars/workshops and webinars to help 4-H professionals learn more about robotics opportunities for youth, how to work with robotics, how to use the curriculum, and how to conduct robotics programs. The specialist also trained another colleague to conduct workshops for 4-H Professionals and developed and conducted a professional development webinar about Inquiry-based instruction for 4-H Professionals.

Results
Participants responded through post-class survey that they better understood how robotics can engage youth in STEM, that they were more comfortable using the robotics equipment, that they knew how to find and use resources, that they were more comfortable with the curriculum and program activities. As a result of the trainings, 15 new WeDo Robotics (ages 5-9) programs were created in counties and have been successfully involving several youth. The trainings have also resulted in the development of 23 new FLL Teams (ages 9-14) and 5 new FTC teams (ages 12-18).

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

Youth and adults will learn how their processing skills and practices affect the consumer acceptability of the product/project. Indicator: Knowledge increase and skill gained

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	300

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Previous Beef Quality Audits have identified quality challenges in the beef industry including excess external fat, inadequate tenderness, insufficient marbling, and lack of marbling. It is important we educate our youth livestock exhibitors, who are raising a product for human consumption, about factors that affect consumer acceptability of their product.

What has been done
Presented beef end-product quality workshops at State Leader's Forum and the Youth Beef Field Days. Taught classes on quality meat production for clubs and at livestock day camps. Conducted consumer judging contests, taste tests (meat and dairy), and other experiential approaches to learn about meat quality.

Results
Post-program questionnaires received from adult trainees indicate knowledge gained about animal production practices and food quality. Leaders report that youth are more concerned about food quality as part of their animal projects as demonstrated by an increase in questions about meat quality and attention to quality-promoting husbandry practices. Forty percent of youth invited to attend BQA workshop took the exam and became BQA certified.

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 #3

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
2014	2500

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Unhealthy beverages are easy to access and make unhealthy choices quick and easy to choose. They are leading the nation?s weight gain and increase obesity in youth.

What has been done
As part of the 4-H Food Smart Families program think-your-drink activity, demonstrations were presented for leaders, youth mentors, and youth about how much sugar is in sport drinks, fruit drinks and soda. Camp Counselor trainings stressed modeling think-your-drink behaviors. Drink choices at 4-H Youth Development venues were limited to healthy selections. Children performed taste tests.

Results
More than 3,000 youth participated in think-your-drink activities. 2,500 of those youth who completed common measures evaluation forms demonstrated their knowledge about sugar content and healthy choices for beverages.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
806	Youth Development

Outcome #4

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
2014	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
It is becoming increasingly difficult to find volunteers who are willing to maintain the community club model. Instead, more volunteers are interested in short term or seasonal volunteer opportunities.

What has been done
Two areas in which 4-H has been successful to identify short term volunteers are in robotics and shooting sports. Volunteers are willing to work with youth on their FIRST Lego League team, or for a Sumo Bot competition at the Western Idaho Fair. Shooting sports volunteers in Ada County have started an advisory council and continue to identify short-term opportunities for interested youth, like six-week project sessions and local shoots.

Results
Although not necessarily engaged with the program year-round, volunteers in the robotics and shooting sports areas have increased our capacity to offer more programs to youth in these areas, which are in high demand in several counties where robotics and shooting sports day camps are the most popular. There has been an increase in the number of programs in these areas, providing more opportunities for youth to learn the skills in an area of interest.

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

Increase youth and adult volunteer participation and knowledge in Essential Elements and experiential learning methodology. Indicator: Total number of youth and adults who attend training and demonstrate knowledge gain.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	103

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
806	Youth Development

Outcome #6

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	895

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
To keep the 4-H programs current and alive, youth and adults need to take leadership roles to run the clubs, events, activities, programs. Communication and teamwork skills are essential to effective leadership in Extension 4-H Youth Development programming. It is important to provide this training to as many youth and adult volunteer leaders as possible.

What has been done
New Leader Trainings, Youth Demonstration Training, and Youth Club Officer Trainings were held throughout the fall, winter, and spring months. Focused programs to develop leadership among youth included the Alpine Leadership College 2014, 4-H Teen Talk Retreat, 4-H Junior Leaders programs, and Teen Camp Counselors training.

Results
Volunteers who receive teamwork instruction more effectively use their individual skills to reach broader goals. For example, teen camp counselors attend over 40 hours of training, much of which includes team building. After a number of years of camp counselor training we have found that trained counselors function as a coherent group and conduct more successful camps.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #7

1. Outcome Measures

Increase support for culturally appropriate programs. Indicator: Number of grants or other funding sources received specific to reaching underserved audiences.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	7

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #8

1. Outcome Measures

Policy changes and cultural climate support to create acceptance of non-traditional programs and their participants. Indicator: Number of faculty and staff involved in making a systematic review of institutional structure and cultural climate through the lens of underserved audiences.

Not Reporting on this Outcome Measure

Outcome #9

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

UI Extension delivered the healthy living and nutrition education program, 4-H Food Smart Families, across the state with an internal partnership between Eat Smart Idaho and 4-H Youth Development. Two significant outputs were:

• 4-H staff, Eat Smart Idaho advisors (SNAP-Ed/EFNEP) and college interns taught 2,581 youth over eight months.They reached each youth with a minimum of 10 hour of nutrition and physical activity education, including hands-on/experiential activities.At the conclusion of the nutrition outreach/education each participant took home enough groceries to make one of the healthy recipes made in class.Eat Smart Idaho youth evaluation and 4-H common Measure evaluation was used (pre and post survey) to measure impact.University of Idaho SSRU on campus is compiling data with numbers due to team in December.

• Another key to the success was the addition of the teen advocates for healthy living (TAHL). A focus group was conducted with TAHL participants in the Treasure Valley. The impact on the teen advocates was greater than anticipated.The program created passionate teens, making them aware of their health and advocating within their communities. The teen advocates showed greater leadership skills, knowledge about eating healthy and moving more, and modeled that behavior for younger children.

Key Items of Evaluation

VI. National Outcomes and Indicators

1. NIFA Selected Outcomes and Indicators

Childhood Obesity (Outcome 1, Indicator 1.c)	
6206	Number of children and youth who reported eating more of healthy foods.
Climate Change (Outcome 1, Indicator 4)	
3	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.