2017 University of Idaho Combined Research and Extension Plan of Work

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I. Plan Overview

1. Brief Summary about Plan Of Work

During 2014, CALS began the process of identifying Programs of Distinction (PODs); those program areas in which the College has greatest strengths as well as opportunities for growth. Two PODs were established during FY 2015, Cereals and Potatoes. A third POD, Healthy Communities and Families, is in the development phase. The nature of these PODs and any future programs of distinction is likely to impact this plan of work in directions that cannot yet be described. For the past several years, The University of Idaho (UI) Plan of Work (POW) includes individual POWs developed by each of 15 Topic Teams. For this FY 2016 plan of work, the Topic Team plans have been again assembled to represent our best approximation of anticipated program development and delivery; with an understanding that the PODs may greatly influence how the plan is eventually put into action.

Faculty Teams contributing to this plan of work include: a) Extension specialists with joint extension and research appointments, b) research scientists with full research appointments, c) faculty with joint research and extension or teaching appointments, and d) county Extension educators with extension-only appointments. Development of each of the Topic Teams was faculty driven and aligns with at least one of the nine key signature programs established in 2005 by the College of Agricultural and Life Sciences (CALS), UI Extension, and the Idaho Agricultural Experiment Station (IAES). The CALS signature program areas include: 1) Environmentally and Economically Sustainable Crop and Livestock Integrated Systems, 2) Animal, Plant and Human Disease Prevention, 3) Agricultural and Food Based Process and Product Innovation, 4) Managing Soil, Water, Air and Biological Resources, 5) Human Health, Nutrition and Food Safety, Disease Prevention, 6) Urban Environment and Small Acreage Agriculture, 7) Youth Education and Development, 8) Individual and Family Well-being, and 9) Community Development. It is unclear whether these signature areas will be largely replaced by the PODs as those program areas are enhanced.

Specific outputs and outcomes described in the POW represent approximately 60% of the total FTEs invested in Idaho research and 80% of the total program FTEs in Extension, as faculty are not expected to plan 100% of their activities out to five years.

Seven planned programs contribute to the priority for Global Food Security and Hunger; they are Global Food Security and Hunger: Cereals, Global Food Security and Hunger: Dairy, Global Food Security and Hunger: Potatoes, Global Food Security and Hunger: Small Acreages and Emerging Specialty Crops, Global Food Security and Hunger: Sugar Beets & Minor Crops, Global Food Security and Hunger: Health & Human Nutrition, and Sustainable Energy: Land & Livestock. Portions of two of our planned programs contribute to the priority for climate change; they are: Climate Change: Forest Management and Climate Change: Soil, Water, Waste and Air Management. Two programs have projects that address the national priority for Childhood Obesity, they are Childhood Obesity: 4-H Youth Development and Global Food Security and Hunger: Health & Human Nutrition. The national priority for sustainable energy is addressed in the Sustainable Energy: Land & Livestock program. Food Safety is one of our ongoing programs.

Estimated Number of Professional FTEs/SYs total in the State.

Year	Extension		Research	
	1862	1890	1862	1890
2017	100.0	0.0	68.0	0.0
2018	100.0	0.0	69.0	0.0
2019	100.0	0.0	69.0	0.0
2020	100.0	0.0	70.0	0.0
2021	100.0	0.0	73.0	0.0

II. Merit Review Process

1. The Merit Review Process that will be Employed during the 5-Year POW Cycle

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

2. Brief Explanation

UI Extension has adopted a "Topic Team" approach to program planning and delivery. Faculty with research appointments are assigned to Topic Teams based upon their area of expertise and signature programs established by CALS. Teams of faculty meet to discuss priorities and agree upon projects for advancement. Topic Team priorities are monitored by College administration. Topic Teams prepare and submit competitive grant applications for state critical issues funding. Successful applications are those that demonstrate that the project meets a team-identified, peer-reviewed priority, and will result in measurable outcomes for stakeholders. An increasing number of programs are supported through grants and awards made by federal, state, or local agencies, foundations, and businesses. It is particularly true for agencies, and increasingly true for private organizations, that the projects meet high standards for quality, relevance, and impact.

All faculty in CALS or other colleges within the UI holding a research appointment in the IAES, are required to have an active, approved research project that reflects their major research emphasis. Hatch projects are expected to address problems relevant to Idaho's agriculture and its citizens. Projects should also include a national or regional scope of importance. Hatch project proposals must be reviewed internally by a minimum of two colleagues with expertise in the area of research, the investigator's Department Head and a minimum of two external experts in the area not affiliated with the UI.

IAES research contributing to Multistate projects/programs and approved by NIFA are categorized as research activities of various types as defined by the State Agricultural Experiment Station System. In the Western Region, these multi-state projects must be reviewed by a maximum of four outside peer reviewers in addition to the overall regional multi-function committee appointed by the Western Association of Agricultural Experiment Station Directors (WAAESD). The RCIC reviews the initial proposal, makes recommendations to the WAAESD and, if approved, transmits the project to CSREES. The RCIC also monitors progress annually.

All Extension and research faculty develop annual position descriptions that outline major programs for the year. These position descriptions are subject to annual merit review at a number of levels, beginning with division leaders and department heads and ending with associate deans and deans. Merit and program success of each faculty member is also thoroughly reviewed throughout the tenure and promotion process by a panel of faculty, at years 3, 5, 10, 15, 20, etc. Review panels charged with specific program responsibilities conduct further merit review. These review panels may include commodity interests, other academics, agency personnel and stakeholders.

III. Evaluation of Multis & Joint Activities

1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?

Critical issues of strategic importance include: individual, family, and community sustainability in terms of social, economic, and environmental conditions that contribute to high quality of life; improving human health and reducing health care costs, contributing to high quality of life; and wise use and conservation of natural resources and natural resource values, contributing to economic, social, and environmental quality and sustainability.

Planned programs address these issues through multidisciplinary education that is intended to change the behavior of individuals, families, organizations, and communities. Specific topics of education include interpersonal relations, youth development and family development, family financial management, leadership skills and development, human nutrition, fitness, food safety, small business development and management, entrepreneurism, plant and animal production and management, soil and water conservation and protection, volunteer development, natural resources management, land use planning, farm financial management, and many more.

The UI planned programs will also be addressed by an appropriate mix of applied and basic research programs. Research target areas overlap significantly with those described above but will be covered by an array of research activities and techniques which include: fundamental studies in molecular genetics, genomics and proteomics, molecular and cell biology; environmental sciences, sustainable agriculture production systems, bioremediation of toxic pollutants, human and animal health and nutrition, food quality and safety, agricultural economics, trade policy and economic and social impact analysis; microbial, insect and weed control; plant, insect, and microbe interactions; crop genetic improvement, physiology, management and production; and food animal and dairy cow physiology, reproduction, and management.

2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?

UI Extension has a proactive process to reach underserved audiences that is outlined in detail in our policies and procedures for civil rights and diversity. As part of that process, input from underserved groups is aggressively pursued; Extension faculty monitor their effectiveness to reach minority and underserved audiences on an ongoing basis; Administration monitors faculty success; and when balanced participation is not achieved, even more aggressive steps are taken to reach underserved audiences.

Approximately 80% of the minority population in Idaho is Hispanic. UI Extension has continued to develop and deliver new programs for Spanish-speaking audiences, has worked to hire Spanish-speaking staff, and has conducted specific activities to gather insights and inputs from Hispanic stakeholders and audiences. Approximately 8% of the minority population is Native American. UI Extension employs three faculty members housed on reservations through the Federally Recognized Tribes Extension Program (FRTEP) program. The three Extension offices and faculty serving this program are fully integrated into UI Extension, in order that resources available across the system are equally available on the reservations.

Several of the IAES research programs directly target and influence Hispanic and Native American populations in Idaho. Research reported in this POW, as well as other research conducted by the IAES, investigates and attempts to influence issues affecting health and financial well-being of these two populations. These research topics also integrate with other programs which emphasize studies of rural communities, economics, single-parent households, and infectious disease basic research and prevention.

3. How will the planned programs describe the expected outcomes and impacts?

Topic Teams have thoroughly considered and identified both performance measures and outcome indicators for their planned programs. These descriptions are included in this POW. Team members will report annually to these measures. Teams have also described evaluation studies. When sufficient data have been collected to indicate that outcomes have occurred, teams will report those outcomes as part of their annual accomplishment reports, as UI Extension Impact Statements, and as other publications and products, as appropriate. Researchers are expected to report their findings in high-quality referred journals, and through participation in discipline-based regional and national conferences. When appropriate, researchers are also expected to report significant advances in development of new intellectual property including plant varieties and other intellectual property that could benefit our stakeholders.

4. How will the planned programs result in improved program effectiveness and/or

Through collaboration with other faculty (research and extension), Topic Team members identify common priorities; plan joint activities; partition the workload; and coordinate knowledge, fiscal, and human resources to reduce redundancy and achieve cumulative impacts. The IAES and Extension administrators will closely monitor progress and resource needs of each Topic Team and assign resources according to need, team effectiveness, and potential impacts to our stakeholders.

IV. Stakeholder Input

1. Actions taken to seek stakeholder input that encourages 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 individuals

Brief explanation.

The most effective approach is to involve stakeholders in the planning and delivery of research and Extension programs. To encourage participation by larger numbers of collaborators, we solicit assistance from stakeholder representatives and advocates to help us advertise and promote participation opportunities. While CALS has long included statements of inclusiveness on program announcements, recent mass media campaigns have helped expose large numbers of non-traditional stakeholders to this commitment.

In securing research and Extension stakeholder input, we will encourage participation by both traditional and non-traditional stakeholders by providing venues that are convenient, economical, and efficient. This will be accomplished by making CALS off-campus video conferencing facilities available, as well as increased use other forms of electronic communications. Selection and eventual invitation of targeted individuals to serve on key stakeholder groups will be accomplished in context of securing representation of Idaho's diverse population and stakeholder interests. Examples of such stakeholder groups include the Dean's Advisory Board, Unit Advisory Boards, and UI Extension Citizens' Advisory Groups.

2(A). A brief statement of the process that will be 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.

Specific methods utilized to identify stakeholder individuals and groups:

- The Dean's Advisory Board, comprised of stakeholder representatives from government,

industry, and education in Idaho. Members are recruited by an invitation and selection process that encourages broad participation representative of Idaho's population diversity, including both traditional and non-traditional stakeholders.

• The seven CALS academic departments have stakeholder advisory boards. Members are recruited by an invitation and selection process that encourages broad participation representative of Idaho's population diversity, including both traditional and nontraditional stakeholders.

• UI Extension has citizen advisory groups in 42 of Idaho's 44 counties which represent a broad mix of public interests from the county perspective.

• Idaho's 17 agricultural commodity commissions and organizations are selected by industry representatives with approval by state government officials.

• Extension newsletters and other communications are sent to every household in some counties,and everyone is invited to provide input and to participate in programs.

• When stakeholder groups can be narrowly defined, UI Extension often collaborates with state and local agencies and organizations whose missions overlap. For example, to reach more seniors,UI Extension has collaborated with AARP and the Agencies on Aging.

• IAES researcher and extension faculty conduct several major commodity schools and "field days" annually in the state. These events are highly advertised through numerous media outlets and attended by stakeholders from Idaho and the region.

2(B). A brief statement of the process that will be 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.

Input from stakeholders is collected in person through advisory committee meetings, through surveys conducted at many Extension events and activities, and through direct conversations with interest groups and other organizations. Periodic surveys are conducted for specific Topic areas using random sampling techniques (for example in Commercial and Consumer Horticulture in 2009, Health and Nutrition in 2011). Data is also collected through random sampling for statewide issues periodically, and individual programs are frequently concluded with an evaluation that includes an opportunity for stakeholders to provide recommendations for future programs.

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.

Stakeholder input is used to formulate overall CALS research and extension strategic goals, as well as the goals and directions of individual Topic Teams. After receiving input from stakeholders as described in sections 2.A and 2.B, the appropriate administrative group or team will plan for short-term and long-term objectives and provide resources accordingly. Acquiring input is documented and formally considered by Topic Teams as part of the priority setting and planning processes for programs and must be included as part of applications for critical issues extension grants and other awards available through the State Office. UI Extension has worked to increase the Spanish-language skills of staff, through both training and hiring to build capacity to reach underserved stakeholders.

A 2009 task force made 5 specific recommendations for Extension to consider, including to conduct a process to re-prioritize our efforts. During 2010, Extension gathered input from two distinct groups of stakeholders to consider during the re-prioritization process. Those activities resulted in the elimination of two programs and in the integration of seven previously independent programs into three programs. This plan of work reflects this reorganization of our priority programs from 21 down to 15.

V. Planned Program Table of Content

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

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Sustainable Energy: Land and Livestock

2. Brief summary about Planned Program

Idaho's livestock and forage industries contribute greatly to the economy of the State. In addition, Idaho's rangeland resources provide many assets not only to the beef and dairy industries, but to all state citizens. This program aims to sustain the productivity of farm land used for forage production, along with both private and public pasture and rangelands. Sustained productivity includes maximizing the efficiency of animal production enterprises as well as enhancing the quality and abundance of other social, biological, and environmental resource values, through application of science-based management strategies, will have a lasting impact on the Idaho economy and the environment.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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%		5%	
111	Conservation and Efficient Use of Water	5%		10%	
121	Management of Range Resources	10%		0%	
122	Management and Control of Forest and Range Fires	5%		0%	
133	Pollution Prevention and Mitigation	0%		5%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	5%		10%	
205	Plant Management Systems	12%		0%	
213	Weeds Affecting Plants	5%		5%	
216	Integrated Pest Management Systems	5%		5%	
301	Reproductive Performance of Animals	5%		10%	
302	Nutrient Utilization in Animals	10%		10%	
305	Animal Physiological Processes	5%		10%	
306	Environmental Stress in Animals	5%		5%	
307	Animal Management Systems	12%		10%	
308	Improved Animal Products (Before Harvest)	5%		5%	
605	Natural Resource and Environmental Economics	5%		5%	
901	Program and Project Design, and Statistics	1%		5%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

In Idaho, 47% of the land surface is rangeland (nearly 25 million acres) and 69% of all land is publicly owned. The primary use of these lands has been livestock grazing, hunting and fishing. Today these rangelands are increasingly seen as a public resource for outdoor recreation, endangered species habitat, open space, and other amenity values. Another 1.5 million acres in Idaho are used to grow hay crops and 1.3 million acres are grazed pasture. These private acres also provide non-livestock amenities including wildlife habitat and hunting, watershed, open space, and recreational values.

Forages from rangeland and pastureland provide a renewable resource to sustain Idaho's grazing

animal enterprises. Economically and environmentally sustainable beef, sheep, dairy, and equine industries depend on these low-cost forage resources. In the future, these lands may provide a source for renewable fuels generation. The beef industry in Idaho is a $1 billion plus industry. Beef and dairy cattle, especially those raised for beef, spend a majority of the year grazing range and pasture lands and the remaining time spent consuming forages produced on farms across the region.

Farmland acres used to grow forage crops have decreased in the last several years in Idaho due to alternative land use demands which include the production of higher value crops and urban sprawl. Demand for high quality forage crops has never been greater in the state due to the large dairy and beef industries. Forage producers must utilize the latest technology and management practices that enable them to meet production and quality demands of the market.

Economic sustainability for the livestock industry depends on many factors including the management of an abundant, reasonably priced forage supply throughout the year, coupled with careful management of production practices, attention to producing high quality beef for the consuming public, and the utilization of marketing strategies. In addition producers must adapt to the challenges of increasing governmental regulation and environmental group pressures that affect the ability to conduct business.

Use of rangelands does include other sources of revenue within Idaho and includes recreational activity such as serving as a tourist destination, outdoor recreation (over $150 million), hunting ($245 million) and fishing ($260 million). Public lands have additional societal value that is harder to value but certainly influences how public lands are used. Addressing the societal values for public lands ensures that production, recreational and conservational uses all contribute to Idaho's economy and maintain its open space heritage.

Invasive species already compromise the quality and productivity of millions of acres of Idaho rangelands and pasturelands, both public and private. Reducing the negative impacts of invaders on already-affected lands and limiting their expansion onto pristine lands requires an integrated approach to management that transcends property lines and political jurisdictions. Costs for treating affected range and pasture lands and for rehabilitating these lands subject to an accelerated wildfire cycle because of invasive species are in the range of $300 million annually.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Idaho produced 4.3M tons of alfalfa on 1,000,000 acres $800M (ranked 4th in the US) in 2012. Producers identified the following issues: Increasing pest and disease pressures, and conditions that favor established pests; Impact of changing production practices on yield and quality issues; and Integration of alfalfa irrigation and harvest management to reduce curing time and increase yield. Alfalfa producers need information and training in diagnosing and solving production problems to produce economically and

environmentally sustainable products required by the ruminant livestock industries.

There are limited opportunities to implement innovative livestock grazing management strategies on federally owned rangelands due to increased litigation and scrutiny from anti-grazing activists However, Idaho ranchers must continue to develop and implement livestock grazing management strategies which demonstrate ecological sustainability and compatibility with other resource values.

Research-based information and scientific advances in rangeland and pasture ecology and management are not readily available or immediately acceptable by grass farmers, ranchers, agency personnel, and many professional resource managers.

Profitability of traditional rangeland and pasture based livestock enterprises often limit the flexibility of ranchers to implement improvements or take the risks associated with adopting novel management techniques.

The long term security of grazing leases on Federal and State owned rangelands is becoming questionable, which decreases the incentives for permit holders to invest in rangeland improvements or long-term management strategies.

Conventional livestock grazing strategies may not meet the contemporary societal values for public rangelands or remain economically and ecologically sustainable.

2. Ultimate goal(s) of this Program

This program integrates knowledge and practice about irrigation of croplands and pastures, nutrient management, plant protection, sustainable grazing practices, invasive species management, soil and water conservation, animal science, economics, and several other disciplines. The goals are to promote the wise and efficient use of rangelands and pasture lands; to optimize the production of high quality forages; to sustain a viable livestock industry; and to protect habitat, recreation, aesthetic, and other resource values associated with these lands.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	8.7	0.0	6.0	0.0
2018	8.7	0.0	6.0	0.0
2019	8.7	0.0	6.0	0.0
2020	8.7	0.0	6.0	0.0
2021	8.7	0.0	6.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

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.

1. Alfalfa and Annual Forage Production and Harvesting

Contribute to the development of production and management systems that are economically viable, ecologically sustainable, and which ensure the safe and efficient production of forages in Idaho. Provide producers with the tools and technologies necessary to implement and maintain effective and efficient forage production systems. Provide producers with the tools necessary to develop, market, and deliver high quality, safe and wholesome products. Conduct applied research and provide support for businesses and individual production decisions.

Upcoming projects 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
- Office and field visits

2. Efficient Production Management and Marketing of Livestock

Contribute to the development of production and management systems that are economically viable, ecologically sustainable, and which ensure the safe and humane treatment of livestock Investigate the nutritional, reproductive, genetic, economic, health, and environmental aspects of livestock production. Provide producers with the tools and technologies necessary to implement and maintain effective and efficient forage and range based livestock production systems. Provide producers with the tools necessary to develop, market, and deliver high quality, safe and wholesome commercial livestock products. Conduct applied research and provide support for businesses and individual production decisions.

Upcoming projects 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
- Office and field visits

3. Rangeland Resource Management and Utilization

Management of Idaho Rangelands requires the integration of research-based information, practical experience and objective observations. This project seeks to increase the understanding of ecological processes and ecological conditions on Idaho rangelands, to improve monitoring, management and environment influence on the productivity, resilience and sustainability of rangelands.

Idaho rangelands are a mosaic of public and private ownership that are used for a plethora of purposes from livestock production, recreation, water production, wildlife and preservation to reintroduction of endangered species Since public policy rather than science often dictates use and management of public lands, good management of public lands can only be accomplished where policy is developed on sound scientific and economic principles.

Invasive plants on Idaho range and pasturelands adversely impact conservation values, forage production for livestock and wildlife, water quality, recreation and jeopardize the safety many Idaho communities from wildfires. Education for private and public land managers will improve knowledge and management of invasive species resulting in better decisions for the restraint of invasive species, rangeland restoration and extension of fire cycle.

Upcoming projects 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
- Office and field visits

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● Web sites other than eXtension
● Demonstrations	

3. Description of targeted 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.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☐ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Schools (multiple sessions of instruction on multiple subjects)
- Workshops (a single meeting with one or more subjects presented, e.g., winter beef schools)
- Demonstrations/applied research projects.
- Popular press articles
- Newsletter issues
- Field days
- Presentations at producer meetings
- Budgets
- Curriculum
- Survey
- Tours
- Websites
- Blog

☐ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Learners acquire knowledge and understanding of new, approved, or recommended practices. Indicator: Number of participants demonstrating change in knowledge on evaluation instruments (i.e. pre- and post-test results). [number of evaluations administered and evaluated]
2	Learners will adopt new, accepted, or recommended production practices. Indicator: Number of participants indicating in post- surveys that they intend to implement recommended practices.
3	Learners are aware of new, accepted, or recommended production practices and emerging technologies (BQA, NAIS, etc.) Indicator: Number of participants at educational events [Based on sign-in sheets]
4	O: Producers possess skills and knowledge about beef quality assurance (BQA). I: Number of Idaho Beef Quality Assurance (BQA) Program certificates awarded.

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 308 - Improved Animal Products (Before Harvest)
- 122 - Management and Control of Forest and Range Fires

- 102 - Soil, Plant, Water, Nutrient Relationships
- 307 - Animal Management Systems
- 301 - Reproductive Performance of Animals
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 605 - Natural Resource and Environmental Economics
- 216 - Integrated Pest Management Systems
- 205 - Plant Management Systems
- 305 - Animal Physiological Processes
- 302 - Nutrient Utilization in Animals
- 111 - Conservation and Efficient Use of Water
- 306 - Environmental Stress in Animals
- 213 - Weeds Affecting Plants
- 121 - Management of Range Resources

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

- 121 - Management of Range Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Numerous factors may affect the success of this educational programming effort. Changes in the resources (faculty, funding, etc.) may limit the team's ability to address issues and reach audiences. As Idaho's population shifts from rural to urban, a general lack of understanding and knowledge about agriculture is threatening the beef industry while competing demands for rangelands increases. This

shift may result in a decrease in funding for traditional Extension efforts. The industry is constantly being challenged by environmental advocacy groups. Changes in county, state, and federal regulations have not consistently benefited producers. Major weather changes, such as drought, may change the priority of issues addressed by the team, and may affect producers' production capabilities. Markets for beef and beef products constantly change. Adoption of new technologies and practices may be affected by producer apathy, a general resistance to change, and producers' limited funds for investment.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

The effectiveness of the resource and livestock management team will be evaluated by program attendance records, program evaluations, amount of information accessed via web sites, and number of requests for information. Pre- and post-tests conducted at programs will provide information on the amount of knowledge gained by participants.

One major study is to evaluate the savings experienced by participants in the proper vaccine handling educational program.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Global Food Security and Hunger: Cereals

2. Brief summary about Planned Program

The cereal crops, wheat, barley, corn and oats are grown in Idaho on more than 3 million acres annually, and harvested grain was valued at nearly $1.5 billion in 2014. Cereal crops are an important component in practically all Idaho crop rotation systems and are considered critical for the productivity and economic viability of the systems and agriculture in Idaho. Objective science based information pertinent to these small grain enterprises is critical for their sustainability. Topic areas for cereal team research and extension programming to provide this vital technology include:

- development and adoption of improved varieties
- using economical, effective, and environmentally friendly crop protection practices
- applying beneficial cultural and fertilization crop management practices
- integrating cereal production practices into a productive cropping system.

Effective and planned research and extension efforts in these program areas will positively influence cereal productivity, farm economic viability, protection or enhancement of the environment, and optimization of grower returns for cereal production in Idaho. Information and technology about cereal production in Idaho must be based on objective scientific information that is highly credible and widely available for implementation by Idaho growers and affiliated agricultural businesses, government support agencies, consumers, and others in neighboring regions and beyond.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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%		10%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		10%	
202	Plant Genetic Resources	20%		10%	
205	Plant Management Systems	25%		12%	
211	Insects, Mites, and Other Arthropods Affecting Plants	5%		5%	
212	Diseases and Nematodes Affecting Plants	10%		10%	
213	Weeds Affecting Plants	10%		5%	
216	Integrated Pest Management Systems	15%		5%	
315	Animal Welfare/Well-Being and Protection	0%		3%	
501	New and Improved Food Processing Technologies	0%		10%	
502	New and Improved Food Products	5%		5%	
504	Home and Commercial Food Service	0%		5%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	0%		5%	
723	Hazards to Human Health and Safety	0%		5%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Producers in Idaho grow cereal crops, wheat, barley, oat, and corn for grain, on about 3 million acres annually. This acreage is 1/3 of the 9.3 million acres of crops grown in Idaho. Growers need unbiased, science derived information and technology to effectively manage their cereal crops for optimum productivity, economic return, protection of the environment, and sustainability. Growers are faced with management decisions that will greatly influence the success of their enterprises that include cereal crops. Decisions include: variety selection, pest management, crop management practices, and integration into their overall cropping systems. There are many specific issues within each of these decision areas that the topic team will be addressing, and most of these issues have short-, medium-, and long-term implications and problems. The issues presented are current and identified by stakeholders.

Development and adoption of improved varieties: Growers need varieties that are productive, have good to superior end use quality, are well adapted, resist diseases, insects, and other pests, fit in weed

control regimes, work in rotation with other crops, and can be managed easily and effectively. These issues are being addressed by effective wheat and barley breeding programs that produce superior varieties for crop performance, some with herbicide resistance, and emphasize end use quality; a comprehensive statewide variety testing program that delivers variety choice information to growers; a weed and pest management program that addresses pesticide resistance, effectiveness and crop systems interactions; and variety specific management and systems evaluations.

Using economical, effective, and environmentally friendly crop protection practices: Crop protection allows varieties to express their yield potential. Critical issues in crop protection include: pesticide resistance, pesticide residue, herbicide efficacy and registration, emerging weed problems (especially in direct seed systems), stripe rust control, root diseases, effective seed treatments, aphids (also as vectors for viruses), Hessian fly, cereal leaf beetle, nematodes, and other pests.

Applying beneficial cultural and fertilization crop management practices: Management practices include: fertilizer application rates, methods, sources, and timing; soil testing; seeding rates, methods, and timing; tillage and seedbed preparation; irrigation and water management, and biological seed treatments.

Integrating cereal production practices into a productive cropping system**:** Cereal production must fit with other crops and this cropping system is important relative to: field selection, crop rotation sequence and rotational crops, and tillage systems.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

• Increasing participant numbers in the program at some levels - research, support scientists, county extension educators.
• Maintaining viability of state and commodity funding sources and supporting structure - continued national support.
•Continuation of cereal crops as an agriculture college priority signature program.
•Cereal growers reliance on public sector as viable sources of information and technology for crop production.
•Knowledge and education will be important in cereal commodity viability.
•Learners achieve incremental increases in knowledge and adapt new practices and technologies over time and will build capital and human resources while maintaining and enhancing the natural resource base.
•Pests and economics will change, increased volatility in input and commodity prices.
•New markets will open.
•Adoption of new technology will change consumer preferences.
•The need for value added products and niche markets will contintue and should increase.

2. Ultimate goal(s) of this Program

Producers in Idaho who grow wheat, barley, oat, and corn for grain, will be provided with unbiased, science-derived information and technology to effectively manage their cereal crops for optimum productivity, economic return, protection of the environment, and sustainability. Technology creation and delivery must address issues that are current and identified by stakeholders, but should be important for the next several years.

Ultimate goals in program area include:

- Development and adoption of improved varieties through effective wheat and barley development programs that produce superior varieties for crop performance; a comprehensive statewide variety testing program that delivers variety choice information to growers; a weed and pest management program that addresses pesticide resistance, effectiveness and crop systems interactions; and variety specific management and systems evaluations.
- Growers using economical, effective, and environmentally friendly crop protection practices that allow varieties to express their yield potential.
- The adoption and use of beneficial cultural, fertilization, and crop management practices to increase productivity and economic return.
- The effective integration of cereal production practices into a productive cropping system to optimize whole farm productivity and economic return while protecting the environment and other stakeholders benefits.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	4.6	0.0	10.0	0.0
2018	4.6	0.0	10.0	0.0
2019	4.6	0.0	10.0	0.0
2020	4.6	0.0	10.0	0.0
2021	4.6	0.0	10.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

1. Applying beneficial cultural and fertilization crop management practices

Provide growers with information and technology for:

- improved fertilizer application and management for efficient use and economic production
- management of harvest losses from lodging, delayed harvest, shatter, sprouting, and mechanical losses, storage
- precise seeding for depth, rate, soil conditions, moisture, timing, and seed quality
- irrigation timing, rates, methods, and water management
- interaction of varieties and management practices

2. Development and adoption of improved varieties

Breeders will develop new, adapted cereal varieties for all classes of wheat produced in Idaho that will have:

- high yield potential
- good to excellent end-use quality
- functional disease and insect resistance or tolerance
- good agronomic characteristics (plant height, establishment, maturity, lodging, response to inputs, harvestability, etc.)
- adaptation for selective herbicide production technology
- end-use demanded by the market

Extension specialists will test varieties and potential lines in diverse locations and provide this technology to growers to empower selection of superior varieties for their needs.
County faculty will facilitate variety and line testing in the area, and extension programming of variety information.

3. Integrating cereal production practices into a productive cropping system.

Provide information and technology that will lead to:

- increases in direct seed and conservation farmed acreage in Idaho
- reduce water runoff, soil erosion, pesticide movement on Idaho farms
- increase crop rotation options and farm diversity
- conserve beneficial biodiversity, including natural enemies of pests
- reduce input costs and enhance economic returns in the production system
- foster greater public understanding of farming practices and farmers' environmental stewardship

4. Using economical, effective, and environmentally friendly crop protection practices

The pest, weed, and pathogen protection project will address:

- providing information about new, emerging, and chronic pest problems such as rattail fescue, herbicide resistant weeds, stripe rust, 'hidden' soil borne diseases, viruses, aphids, cereal leaf beetle, Hessian fly, nematodes and other problems
- pesticide registration and environmental fate
- understanding pest biology and interaction with cropping systems and the environment

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods

● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● Web sites other than eXtension
● Demonstrations	

3. Description of targeted 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.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Idaho Cereal Schools
- Release and adoption of new cereal varieties
- Publication of CIS, Progress reports, PNW, and other Ext. Pubs.
- Develop pest control technology - project/experiments
- Research on management systems - projects/experiments

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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

Outcome # 1

1. Outcome Target

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. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 216 - Integrated Pest Management Systems
- 502 - New and Improved Food Products
- 102 - Soil, Plant, Water, Nutrient Relationships
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources
- 213 - Weeds Affecting Plants
- 212 - Diseases and Nematodes Affecting Plants

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 502 - New and Improved Food Products
- 212 - Diseases and Nematodes Affecting Plants
- 205 - Plant Management Systems
- 202 - Plant Genetic Resources
- 211 - Insects, Mites, and Other Arthropods Affecting Plants

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

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. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 315 - Animal Welfare/Well-Being and Protection
- 501 - New and Improved Food Processing Technologies
- 216 - Integrated Pest Management Systems
- 502 - New and Improved Food Products
- 205 - Plant Management Systems
- 723 - Hazards to Human Health and Safety
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 102 - Soil, Plant, Water, Nutrient Relationships
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 212 - Diseases and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 202 - Plant Genetic Resources
- 211 - Insects, Mites, and Other Arthropods Affecting Plants

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Survey of participants at cereal school, and possibly other education events, about use of information and adoption of technology from previous educational events. This survey should: evaluate learning, evaluate use and adoption of previously learned material, and evaluate motivation to adopt recently learned material.

Evaluate and review the numbers, use, or distribution of: websites, printed educational materials, new varieties, attendance patterns at educational events, variety releases, and crop management research trials.

Review published variety use in Idaho to determine acreage of new varieties.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Commercial and Consumer Horticulture

2. Brief summary about Planned Program

The CALS Commercial and Consumer Horticulture Team is comprised of specialists and county educators with appointments in extension and/or research horticulture. The primary team objective is to provide extension outreach programs and applied research for the benefit the Idaho green industry and consumers. Education and outreach efforts include a wide range of programmatic offerings, including Master Gardener and Junior Master Gardener volunteer training, certified nurseryman certification training, publication of timely information of horticultural topics, development of informational web sites, workshops and seminars for green industry employees and for public education, field days and demonstration gardens, and one-on-one contacts. Research is directed at applied topics and include improvement of nursery production systems, local food production systems, and development of new plant products for the green industry.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	15%		0%	
111	Conservation and Efficient Use of Water	15%		25%	
202	Plant Genetic Resources	8%		25%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	5%		0%	
204	Plant Product Quality and Utility (Preharvest)	10%		25%	
205	Plant Management Systems	25%		25%	
216	Integrated Pest Management Systems	20%		0%	
805	Community Institutions and Social Services	2%		0%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Idaho is experiencing a rapid shift in demographics. In 1990 the state population was 2/3 rural. Currently, the population is more than 2/3 urban, corresponding to an increase of over 500,000 people in urban settings, with a corresponding increase in land used for gardens, landscapes, golf courses, greenbelts, etc. At the same time, urban citizens have limited knowledge of subjects related to horticulture. At the same time, there is a rapidly increasing interest in local food production, food safety and security, home gardening, home landscaping, development of community green spaces, environmental sustainability, and other subjects related to urban plant systems. There is a critical need in Idaho for educational programs associated with community horticulture.
Associated with the increase in managed landscapes is growth of the "green industries," that produce and sell plants and products for use by consumers. In 2013, direct green industry output was approximately $650 million. Most green industry companies employ seasonal or inexperienced people in positions that require basic knowledge of plant care and sustainable landscape principles. Educational opportunities for green industry professionals are limited and companies benefit heavily from university sponsored programs.
Short-Term Issues:
1) Lack of public horticultural expertise in establishing and maintaining healthy, productive plant systems.
2) Economic uncertainty in the Idaho green industry.
3) Inadequate personnel and training resources within CALS extension.
Improvement in outreach programs will include a strong Master Gardener volunteer training program and dissemination of both consumer and commercial horticultural information through workshops, web sites, and publications.
Medium-Term Issues:
1) Need for consistent, on-going training of youth and adults in horticultural topics.
2) Adaptation of teaching programs to include the newest electronic informational delivery systems.
3) Lack of statewide continuity in horticultural programming and education.
Given that UI resources for teaching horticultural topics are limited, maintenance of a strong Master Gardener volunteer program is esential to all public training efforts. Strengthening the Junior Master Gardener program will become more important in the future. In the medium-term, the team will aggressively seek to improve voluteer training manuals and resources.
The team is working to modernize information delivery systems by employing training videos, web-based training programs, and social media.
Long-Term Issues:
1) Continuing change in state demographics that will increase the need for horticultural education.
2) Lack of environmental sustainability within current horticultural practices.
3) Limitations of natural resources, especially water, on urban plant production practices.
Research and outreach programs will need to include elements of sustainability. Over the long term, the goal is to create a social atmosphere that will encourage the use of environmentally sound principles and provide the knowledge to allow successful adoption of such principles.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Extension
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Assumptions

1) Public interest in horticultural systems, namely food production and green space development, will remain strong and likely increase in the future.
2) The demand for sound, research-based horticultural information will remain strong and probably increase, possibly significantly.
3) University and CALS personnel and financial resources to meet the burgeoning demand for information will not increase, and may continue to decline.
4) The need to influence behavior toward environmental sustainability may become critical in the future.
If public demand for information continues to increase, while at the same time CALS resources continue to decline, it will become very important to recruit new resources by maximizing the use of volunteer programs, and also to increase the use of more efficient electronic information delivery techniques.
Educated consumers will be more likely to invest time, money, and energy into creating and improving public green spaces that will add quality and culture to the lives of Idaho's citizens. This will improve the economic outlook for the green industry in the state.
If natural resources are to become increasingly limiting, it is important that sustainability become a focal point for all outreach programs that involve urban horticulture.

2. Ultimate goal(s) of this Program

The ultimate goal of the Horticulture Team is to directly improve the lives of Idaho citizens by:
1) Providing the public with the informational resources to increase personal independence through personal food production and the ability to create aesthetically valuable green space.
2) Creating a social environment that espouses environmental awareness and stewardship and increases the use of sustainable horticultural practices.
3) Provide research and educational support for the Idaho green industry that will allow them to remain fiscally strong and to indirectly contribute to goals 1 and 2.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	7.7	0.0	1.3	0.0
2018	7.7	0.0	1.3	0.0
2019	7.7	0.0	1.3	0.0
2020	7.7	0.0	1.3	0.0
2021	7.7	0.0	1.3	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Planned Activities - Master Gardener Education Project:

1. Consumer Horticulture Education

The Consumer Horticulture Education project is designed to provide outreach and information that will improve understanding of basic horticultural principles among citizens statewide. Educational topics include landscape design, landscape management, tree selection, soil management and improvement, vegetable production, fruit production, water conservation, proper use of pesticides, environmental stewardship, solid waste management, and many others. Homeowners and public managers will be taught using various tools, including workshops, seminars, publications, web sites, newsletters, presentations on broadcast media, social media, and associations with local horticulture-based organizations. This project has the potential to benefit every citizen in the state of Idaho and ultimately increase public awareness and support for UI extension activities. Impacts include an increase in the quality of life as a result of improved care of public and private green spaces, reduction of pressure on municipal and natural resources, improved food security, increased home and property values, better water quality, reduced home pesticide use, and improved sustainability in common landscaping and gardening practices.

2. Green Industry Education

The green industry includes all retail, wholesale, production, and service industries that deal in horticultural products. It is a significant segment of Idaho's economy, accounting for over $650 million in direct industry output. The green industry includes a diverse group of businesses, including nursery crop producers, Christmas tree growers, wholesale greenhouse producers, turf producers, retail nurseries, landscape designers, landscape installers, lawn care services, tree trimming companies, and many others. Until the 2009 economic downturn, the green industry was one of the fastest growing segments of Idaho's agricultural economy. Its diversity and requirement for highly trained employees creates a critical need for extension-derived education. Current extension and outreach inputs include a certified nurseryman training course, the Green Collar College associated with the Idaho Hort Expo, a web-based informational resource center, web-based and printed publications, field days and demonstrations, pesticide applicator training events, and seminars and workshops on timely and critical topics. Team resources dedicated to this program area are limited and programming currently does not meet critical industry needs. The impact of this project is improved products and services provided by the green industry. Due to their frequent and direct interface with the public, well-informed green industry employees equates to better educated consumers. This project has a direct impact on product sales, industry growth, and thus state economy.

3. Master Gardener Volunteer Development Education

Idaho's demand for consumer horticulture information far outstrips U-Idaho Extension personnel resources to supply the required education. The Master Gardener and Junior Master Gardener programs are designed to help alleviate this problem through the development of county-based volunteer educational teams. Trained Master Gardener volunteers provide public education in the form of organized public workshops and seminars, plant problem diagnostic clinics, personal contact with community members, design and completion of plant-related public works projects, demonstration gardens, development of popular publications, and personal contact with neighbors and other members of the public. Master Gardener education is intensive and comprehensive. As a result, Master Gardeners become capable teachers and influential mentors, thereby providing impacts that are varied, critical, and widespread. Master Gardener trainees benefit personally by developing employable skills. As volunteers, they assist with county and community improvement projects that provide measurable economic value. They provide extensive consumer education that results in public benefits such as greater family economic independence through more efficient home food production, improved water conservation and water quality, reduced environmental impacts related to the adoption of sound horticultural practices, better management of solid waste, and improved quality of life for Idaho citizens. Also, youth-based Junior Master Gardener programs enrich health, science and nutrition education and help reduce problems with troubled youth.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations	● Public Service Announcement ● Newsletters ● TV Media Programs ● Web sites other than eXtension

3. Description of targeted 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.
Ongoing programs are being maintained to provide Master Gardener and Consumer Horticulture education for the Shoshone-Bannock tribes in southeastern Idaho and the Nez Perce tribe in northern Idaho.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Master Gardener-Advanced MG Workshops/Tours: faculty contribution to Advanced MG Training. Do not include beginning MGs. Multiple team members may contribute to a single event. Enter the number of Advanced MG training events you helped organize or during which you presented educational material.
- Master Gardener-Beginning MG Courses Organized/Supervised: Number of MG courses (not classes within a course) organized/supervised by educators. Do not enter individual presentations made for basic MG training. Please enter the number of courses you organized or supervised during the past year.
- Consumer Education-Public Outreach Pubs/Products: Number of faculty-authored press and Extension media products developed for consumers. Includes magazine articles, newspaper columns, newsletters or newsletter articles, radio or television spots. Enter the number of products developed/published during the past year.
- Consumer Education-Websites: Statewide and county websites (faculty-authored) containing consumer-based horticultural information, developed or actively improved during the year. Enter only the number of actual websites (not individually-authored web products).
- Consumer Education-Workshops, Seminars, Demonstrations, Field Days: Faculty contributions to consumer-based education events (exclude MG classes, reported elsewhere). Example: an event with one organizer and two faculty teachers would be reported by all three contributors. Enter the number of events.
- Green Industy Education-Workshops, Seminars, Clinics: Faculty activity associated with green industry educational events. Each person involved in an event should record their contribution, resulting in a sum of team activity. Enter number green industry education events that you organized or at which you presented.
- Master Gardener-Volunteer Hours: This metric reflects the time contributions of MG volunteers you directly supervise. Please enter the total number of hours contributed by all volunteers over the past year.
- Green Industry Education-Websites: Number of statewide or county web sites with green industry-targeted content developed or actively improved during the year. Do not enter authored content products. Enter the number of active sites.
- Master Gardener-Direct Contacts with Stakeholders Made by Certified MGs: This metric reflects contacts made by certified MGs (in clinics, presentations, etc.) as opposed to those made by faculty. Please enter the number of direct contacts during the past year by volunteers you supervise.
- Master Gardener-Presentations to Beginning MGs: Measure of direct faculty contribution to beginning MG training other than course creation or organization. Enter number of presentations you made to beginning MG classes (face-to-face, distance, presentation of recorded materials that you personally prepared).
- Master Gardener-Volunteer-Authored Pubs/Products: Report products developed by supervised MGs or other volunteers (exclude those with faculty authors): bulletins, fact sheets, web content, PowerPoint, media productions for radio or television. Enter number of products during past year.
- Master Gardener-Volunteer MG Contributions to Workshops, Seminars, and Demonstrations: Number

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

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

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 805 - Community Institutions and Social Services

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems
- 202 - Plant Genetic Resources
- 216 - Integrated Pest Management Systems
- 111 - Conservation and Efficient Use of Water
- 204 - Plant Product Quality and Utility (Preharvest)
- 805 - Community Institutions and Social Services
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 216 - Integrated Pest Management Systems
- 204 - Plant Product Quality and Utility (Preharvest)
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants

- 205 - Plant Management Systems
- 111 - Conservation and Efficient Use of Water
- 805 - Community Institutions and Social Services
- 202 - Plant Genetic Resources
- 102 - Soil, Plant, Water, Nutrient Relationships

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

The over-arching objective of the team is education of Idaho's citizens with respect to sustainable horticultural principles. Any factor that influences how and where people live will impact this program. A growing population will bring greater demand for educational resources and greater demand for new landscapes and plant material. Increased demands on resources will bring changes in regulations and public policy, thus resulting in greater demand for knowledge about conservation principles.
Changes in the state and national economy also has an impact as it may affect housing markets, employment, and consumer spending on horticulture products and services. Natural disasters such as floods or fire may impact personal and public green spaces in negative or destructive ways, but may also spur new needs in research and education. For example: reclaiming flooded soils or planting a fire safe landscape.
In conjunction with the potential for increases in programmatic demands, there has been a significant decline in county and University of Idaho resources for conducting the program. The team has experienced financially-driven losses in county educators and extension specialists. State and county support for extension, in general, has declined due to a poor economy and a need to stretch diminishing funds.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation - Master Gardener Education:
The Idaho Master Gardener program is currrently the subject of a major evaluation effort. Surveys and case studies are being employed to evaluate behavioral changes in participants that result from completing the Master Gardener basic training course, or being in contact with Master Gardener volunteers. Changes in attitudes and practices are being assessed in relation to adoption of research-based, sustainable horticultural principles. Adoption of principles will be translated into Impact on communities in the form of monetary savings, natural resource conservation, water quality, management

of solid waste materials, and amelioration of issues with troubled youth.
Training effectiveness for the Master Gardener program will be assessed by measuring student improvement during the basic course using before and after exams. The goal is to improve knowledge as expressed in exam scores by 20-30%
Program efficacy will be assessed by calculating the percentage of county-based Master Gardener programs that conform to published statewide policies. Over the life of the plan, an effort will be made to bring at least 80% of the programs into statewide compliance.
Other assessments of Master Gardener program operations will also be conducted. One is to measure the number of new Master Gardener volunteers certified each year, as an indicator of increases in educational personnel resources. Another is to measure retention of qualified volunteers, as an indicator of program effectiveness in maintaining educational personnel resources. Each year the number of new certified Master Gardeners, and the number of total Master Gardener volunteers will be calculated on a statewide basis.

Evaluation - Consumer Horticulture Education:

Statistics will monitored for the horticulture web site. The number of hits will be recorded each year.

Evaluation - Green Industry Education:

Participant evaluations will be completed at the Green Collar College at the Idaho Horticulture Expo each year. Responses will be used to tailor pertinent programming.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Community Development

2. Brief summary about Planned Program

Communities across Idaho are changing. Residents and communities face huge challenges due to economic and demographic changes. The traditional natural resource and agriculture industries are employing less people. Urban areas are growing and demands for recreational use of land, water, and preservation of the environment are increasing.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

The Community Development topic team develops and implements high quality research-based educational programs for individuals, families, businesses, organizations, and non-profits. To assist Idaho communities in meeting these challenges, three priorities will be addressed:

1. Human and Social Capital Development

2. Business and Community Entrepreneurship

3. Community Spaces and Places

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Through its well-established community base and research based educational programming, UI Extension is uniquely positioned to help Idaho's communities develop knowledge & skills in order to make better decisions for increasing the quality of life in their communities.

Additional resource assumptions:

• UI Extension will provide leadership to assist Idaho Extension Faculty in developing expertise in the three Community Development program focus areas.
• Funding will be available to assist the Community Development Team members in traveling throughout Idaho to conduct programming, train other Extension Educators, and provide technical assistance to communities.
• Funding will be available for Community Development Team members to meet to plan statewide programs and develop curricula as needed to carry out Community Development programming throughout Idaho.
• University of Idaho Extension will cooperate and collaborate with other Idaho agencies and organizations serving communities for maximum impact and to reduce inefficiencies.

2. Ultimate goal(s) of this Program

The Community Development Topic Team lends research-based expertise to Idaho citizens' efforts to improve the quality of life for everyone in their communities. The team emphasizes sustainable community development, viewing communities as systems where the functioning of each part of the community affects the others. We focus at a number of levels and on a range of community capitals, from developing human and social capital (skills and relationships), built and natural capital (places and spaces), to financial capital (diverse industry mix and entrepreneur-friendly communities).

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890

2017	4.5	0.0	2.0	0.0
2018	4.5	0.0	2.0	0.0
2019	4.5	0.0	2.0	0.0
2020	4.5	0.0	2.0	0.0
2021	4.5	0.0	2.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

1. Business and Community Entrepreneurship

This program helps strengthen Idaho's economy by increasing numbers of entrepreneurs and small business owners and building their capacity to succeed. Business development goals are accomplished through educational activities related to starting, sustaining and expanding businesses. Economic development goals are related to building social, human, cultural, financial and built capital at the regional, county, community and family levels. Activities include helping leaders access and utilize data to make better decisions, creating networks and partnerships to build and expand economic development efforts, connecting communities to resources for building infrastructure and capital and by a strong focus on building the capacity of young adults to create career pathways.

2. Community Spaces and Places

This project focuses on the natural capital of communities, including design and planning for an enhanced sense of community, as well as sustainable economic development. Planning and design projects have been identified as significant priorities by the large majority of the 33 communities the University of Idaho worked with through the Horizons project. Example projects include gardens, community centers, green belts, and farmer's markets.

There is much opportunity for Extension and Moscow-based faculty to work together to build this natural capital. Teams of graduate students are matched with volunteer private sector professionals and Extension County Educators as 'Rapid Response Design Teams' to complete concepts for community designated priority public space projects.

3. Human and Social Capital

This program addresses the need for a skilled workforce and an active community leadership. It focuses on building social, political and human capital through community leadership development training and facilitation, individual leadership & skill building training, non-profit board training, and programs to increase access to training for living wage work. Methods include formation of community leadership committees, workshops, in-depth training, and coaching, and community-based schemes for access to higher education and workforce training. Target audiences include new and future leaders, individuals currently serving in leadership roles, small rural non-profit organizations, and youth transitioning to adulthood.

Planned activities in Community Development include:

- In-depth workshops,classes and activities that build capacity and financial, built, cultural human, social, and natural community capitals.
- Regional business development training programs will be created in partnership with other

service providers such as Small Business Development Center, economic development agencies and other local entities,private and public, that provide business development services.

- Teams of U Igraduate students and design professionals,will work with communities to develop design concepts to meet community design and planning needs.
- Training opportunities will include, but are not limited to:starting a business, marketing, marketing for specific industries, such as artists, financial management, customer relations,generational differences and employee expectations, e-commerce, packaging and labeling, business expansion, creating entrepreneurial communities and building production capacity for local, value-added industries.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● Web sites other than eXtension
● Demonstrations	

3. Description of targeted audience

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.

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.
Underserved audiences targeted in CD efforts include: youth, women, ethnic and racial minorities, non-English speakers and residents living in poverty. The Horizons Leadership program specifically targets low-income residents of Idaho. Other opportunities will be explored at Topic Team meetings throughout the year.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Steering Committees/Teams formed
- Materials/Curriculum developed
- Presentations/Workshops delivered (one shot)
- Series/Short Courses/workshops - organized and/or taught
- Conference posters/presentations
- Boards & Communities - Facilitated/Mentored/Coached
- Communities served
- Counties served.
- Web-based educational materials

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

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. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 7

1. Outcome Target

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. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 8

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development
- 806 - Youth Development
- 805 - Community Institutions and Social Services
- 610 - Domestic Policy Analysis
- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 9

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 903 - Communication, Education, and Information Delivery
- 131 - Alternative Uses of Land
- 124 - Urban Forestry
- 134 - Outdoor Recreation
- 608 - Community Resource Planning and Development
- 111 - Conservation and Efficient Use of Water

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 10

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 604 - Marketing and Distribution Practices
- 609 - Economic Theory and Methods
- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 608 - Community Resource Planning and Development
- 603 - Market Economics

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Appropriations changes
- Competing Public priorities
- Competing Programmatic Challenges

Description

Primary factors affecting the success of this topic team are 1) competing demands on time of faculty to work in other topic team areas 2) continued support of Community Development work by UI Extension Director 3) continued training funds for building Community Development expertise among faculty, 4) changes in populations and economies will increase the rate of requests for low cost community and economic development services, and 5) continued funding for travel to expand statewide Community Development programming emphasis -- this is a pivotal time for Extension's community development efforts. Rather than dedicate all spare resources to University level engagement, resources must continue to flow to the faculty doing the work on the ground so that they may both build on established program areas and develop and maintain links to a statewide network of community and economic development agencies, organizations and practitioners.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Strategies and activities of the community development team vary widely depending on the content and evaluation methods will be planned accordingly. One method which has proved to be particularly informative to reveal the impact of broad community programs is ripple effects mapping, which the UI community development team has used in several communities.

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Global Food Security and Hunger: Dairy

2. Brief summary about Planned Program

The overall goal of the dairy topic team is to help Idaho producers improve profitability and productive efficiency of their farm business and thereby improve the well-being of their families and communities. The dairy topic team has two projects: dairy management and workforce development. The dairy topic team will accomplish our goals through educational programs that include workshops, seminars, applied on-farm demonstrations, publications, and website development. We will work with dairy producers, allied industry, private consultants, industry organizations, and state regulatory agencies.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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	20%		30%	
305	Animal Physiological Processes	20%		10%	
307	Animal Management Systems	20%		10%	
308	Improved Animal Products (Before Harvest)	0%		10%	
311	Animal Diseases	20%		10%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

The dairy industry is vital to Idaho's economy. In 2015, Idaho's dairy farm families produced 14.1 billion pounds of milk, further solidifying Idaho as the second largest milk-producing state in the western U.S., and the third largest nationally. Idaho cash milk receipts were $2.4 billion in 2015. Idaho produced 895 million pounds of cheese in 2014, ranking third in the nation behind California and Wisconsin. In December 2015 there were 579,000 lactating cows in Idaho.
The focus of Dairy extension in Idaho can be categorized into two broad topic areas: improving dairy

management, and workforce development. Input from district dairy advisory committee meetings, dairy industry groups and surveys provide key input for prioritizing efforts within these two main focus areas.
Improving Dairy Management. Dairy Extension is a key source of science based information for Idaho dairy operators and their employees. Information transfer occurs via on-farm visits, office visits, telephone calls, presentations, and written publications. New management techniques and strategies are available to improve reproductive efficiency, herd nutrition, animal health, milk quality, heifer management, cow comfort and environmental emissions. Based on input from our dairy advisory committees, the Idaho dairy Extension team conducts on-farm trials to demonstrate efficacy of new management strategies and provide data to promote adoption of these new technologies. Dairy advisory committees are also involved in the planning, development, and prioritization of Extension educational activities relating to dairy management.
Dairy Workforce Development. The Idaho dairy industry relies on a strong, knowledgeable, and committed workforce. For the past 8-12 years, dairy topic team members have developed, improved, and delivered training for Dairy Workforce Development. Recognizing that Idaho dairy producers rely on a Spanish-speaking workforce, University of Idaho Dairy Extension plays a very important role in providing training to improve the knowledge and skills of this traditionally underserved audience. English language programs are also offered --- in fact, many educational opportunities for Dairy Workforce Development are offered in a bi-lingual format. The dairy topic team continues to provide training in the following areas:
· Milking procedures, milk quality, food safety
· Artificial insemination
· Raising dairy calves
· Hoof trimming
· Mixing total mixed rations
· Identifying sick cows and calves
Extension Advisory Committees have consistently rated Dairy Workforce Development (in Spanish and English) as a high priority. Recently, Dairy Topic Team members have observed that Hispanics are employed at various management levels on the dairy, ranging from section managers (milking parlor, feeder crew managers, hospital managers, etc.) up to whole dairy operation managers. The trend of Hispanics holding middle-to-upper management positions is relatively new to Idaho dairies. To ensure the sustainability and profitability of Idaho dairies, it is vital to build the knowledge and skill level of these new managers in topics related to dairy management, advanced dairy topics, and strategies to cope with new responsibilities. The Dairy Topic Team will continue to develop and implement new curricula for dairy workers, dairy managers, and herd owners as new priority areas are identified by our dairy stakeholders.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Our first assumption is that dairy producers recognize the value of training programs for their hired workers. Educational workshops are planned for Hispanic workers in several subject matter areas (milking

management, feeding management, AI technique, and calf rearing practices). Our second assumption is that the schools will increase understanding and knowledge of appropriate dairy management practices. We will test this assumption by using pre- and post- testing at each of the schools. Finally, we assume that the dairy workers and dairy managers will adopt the University recommended practices on their operation. The benefits of practice adoption vary between the four schools. Improved milking management should result in better compliance with recommend milking practices, lower milk somatic cell counts and reduced clinical mastitis. Improved feeding management should result in higher fat concentration, improved milk production, reduced lameness, and healthier cows. Adopting recommended AI practices should result in improved conception rates, lower semen costs, and higher reproductive efficiency. Improved calf rearing practices should reduce calf disease and calf mortality losses. Farm profitability and productive efficiency is improved in all four examples.

2. Ultimate goal(s) of this Program

The ultimate goals of the dairy topic team are to help dairy producers identify and implement dairy production and management practices that are economically profitable, environmentally friendly, and socially acceptable. Specific assumptions are shown below:

- Dairy managers will have current, unbiased, science based information to make informed management decisions
- Dairy employees (both English and Spanish speaking) will understand principles of recommended production practices.
- Dairy owners will adopt recommended practices to improve production profitability and efficiency.
- Milk quality on dairies will improve with lower somatic cell counts, fewer cases of clinical mastitis, and fewer incidences of antibiotic residues in milk.
- New and remodeled facilities will be better designed to improve cow comfort.
- Feeding management will improve to provide a more consistent and appropriate ration to all cattle.
- Improved ration formulation will reduce nutrient excretion caused by excessive nutrients in the diet.
- Dairy managers will better understand strategies to improve reproductive performance.
- Improved and/or properly used synchronization protocols will result in increased pregnancy rates.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	1.9	0.0	2.5	0.0
2018	1.9	0.0	2.5	0.0
2019	1.9	0.0	2.5	0.0
2020	1.9	0.0	2.5	0.0
2021	1.9	0.0	2.5	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

1. Dairy Management

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 award-winning, science-based educational opportunities for current and future Idaho dairy employees Educational opportunities 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. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● One-on-One Intervention ● Demonstrations	● Newsletters ● Web sites other than eXtension ● Other 1 (Popular press articles)

3. Description of targeted audience

Target Audiences

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.

Underserved Audiences

Approximately 90% of the dairy labor force is Hispanic. The dairy extension team has developed three educational schools for training dairy workers (in Spanish and English). Additional schools will be developed over the next five years. 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.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Winter Dairy Forums
- Milker schools
- Calf Schools
- Artificial Insemination Schools
- Feeder Schools
- Popular Press articles
- Abstracts and Proceedings

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges

Description

Dairy Extension Specialists receive travel support from state funds and from industry grants. The level of financial support from industry has declined in the last few years. Despite declining state, federal, and industry financial support, the UI dairy Extension team has successfully offered a broad range of educational topics that addressed needs of our target clientele.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Post/pre testing will be utilized to measure knowledge change and practice adoption. Pre/post testing will be utilized to measure knowledge change. Follow-up surveys will be used to determine changes in calf health and feeding management practices as a result of attending calf and feeder schools. Case studies will be conducted on dairies where middle managers participate in the University of Idaho middle managers training sessions.

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Family Finance

2. Brief summary about Planned Program

After the "great recession," the financial situation of Americans continues to go through rapid changes both with greater responsibility placed on consumers to manage their financial well-being and greater complexity with a larger variety of tools and financial products available to use. Managing one's finances involves a complex set of challenges which require a combination of knowledge, skills, judgment, and resources. Individuals and families must work through a bewildering variety of financial decisions, ranging from budgeting and managing credit to planning for retirement and protecting against identity theft. Even the simplest of these decisions requires at least some basic financial knowledge and competency, while more complicated decisions are challenging even for experts.
According to the 2012 National Financial Capability Survey of Idahoans: 18% reported that over the past year, their household spent more than their income (not including the purchase of a new home, car, or other big investment), while 27% reported having medical bills that are past due; 61% lack a rainy day fund to cover expenses for three months, in case of emergencies such as sickness, job loss, or economic downturn; 28% reported using one or more non-bank borrowing methods (e.g. payday loans) in the past five years; 34% of those with credit cards paid only the minimum on their credit cards during some months in the last year; 20% of homeowners owe more on their home than its current market value; and 56% were unable to answer more than three of the five financial literacy questions correctly.
Older adults are Idaho's fastest growing demographic group and are experiencing unemployment, loss of income and asset value, and increasing health care costs while trying to plan for financial security in later life. Many are ignoring the reality that one-third of their lives may be ahead of them after age 60, putting their future financial security at risk. In addition to funding a potentially long retirement and protecting themselves against health-related expenses, older Idahoans need to address issues such as organizing financial and legal records, estate planning, preparing Advance Directives, and communicating their wishes with loved ones. The Topic Team will offer and promote classes/workshops/seminars, web sites, and publications to help older Idahoans address these issues.
Research indicates that as little as 10 hours of personal finance education positively affects the spending and saving habits of youth. Youth ages 3 to 18 are the Topic Team's primary audience, though we also train teachers, youth-group leaders, and volunteers how to use youth financial literacy programs with their students and members. The Topic Team will offer education via classes/workshops/seminars, publications, web pages, and social media.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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 (Situation and Scope)

1. Situation and priorities

Idahoans need unbiased, research-based information and education to effectively manage their financial resources. They are faced with financial decisions that greatly influence their short, medium, and long term well-being. Peoples' financial education needs change as they progress through the life cycle. The areas listed below are current and identified by stakeholders.
Basic Financial Management: Individuals lack awareness, knowledge, and skills to:

- Set financial goals
- Track expenses
- Prepare and use spending plans
- Organize and maintain financial records
- Obtain health insurance
- Use credit wisely
- Reduce debt
- Guard against identity theft
- Save for the future
- Use technology to manage finances
- Predatory lending

Financial Security in Later Life: Planning for later life issues impacts financial security; topics to be addressed include:

- Retirement planning
- Investing
- Organizing important papers, advanced directives, and estate planning topics
- Understanding Social Security and Medicare programs

Youth Financial Literacy: Young people who learn money management skills early are more likely to be better financial managers in adulthood. Topics to be addressed with youth include:

- Financial decision making
- Money management and consumer skills
- Credit and credit scores
- Mobile financial apps and websites
- Employability skills
- How education levels impact employment opportunities and income
- Paying for higher education

2. Scope of the Program

- In-State Extension
- Multistate Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

• When people are in a state of "financial wellness," they are in control. They are confident and focused. They have greater balance and stability so they can concentrate on the most important tasks at hand such as weathering financial difficulties and making progress toward their financial goals.
• Financial management, including financial decision-making, is a learned skill that must be practiced every day. Education contributes to the development of this life-long skill.
• Financial management knowledge and skills will be important to Idaho residents and they will rely on Extension as a viable source of financial information and education.
• Learners will achieve incremental increases in awareness, knowledge, and will adopt new practices over time.
• Extension educators are a trustworthy source of financial education due to their training, experience, and objectivity.
• There is public value in providing financial education and improving the financial well-being of citizens. The need for financial education will continue and increase as new target audiences are reached.
• Minority populations will increase in numbers and will impact delivery methods.
• Consumer adoption of new technologies will change what and how Extension delivers financial education.
• Maintenance in numbers of faculty and staff in program including: Extension consultant, county Extension educators, Eat Smart Idaho advisors, and support staff is required.
• Continuation of funding sources: private, public-local, state, and national, grants, and donations is necessary.
• Continuation of personal and family finance as a Family and Consumer Sciences School and Extension is a priority.
• Financial education needs will be impacted by environmental, political, and economic conditions.

2. Ultimate goal(s) of this Program

The goals of the Personal and Family Finance plan of work are to:

• Increase awareness and attendance for Extension Personal and Family Finance programs.
• Increase use of Extension Personal and Family Finance information, publications, and web-based resources.
• Extend Personal and Family Finance programs to new and diverse audiences.
• Increase decision-makers' awareness and knowledge of Extension Personal and FamilyFinance programming and outcomes.

Outcomes from the plan of work will result in Idaho residents increasing their utilization of successful strategies for financial management because Extension educators are providing unbiased, research-based information and education. This education and delivery will address issues that are timely and identified by stakeholders and are relevant to the five years of this planning cycle. Ultimately, Idahoans will be able to effectively manage their finances for optimum economic and emotional well-being.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	5.9	0.0	0.0	0.0
2018	5.9	0.0	0.0	0.0
2019	5.9	0.0	0.0	0.0
2020	5.9	0.0	0.0	0.0
2021	5.9	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

1. Basic Financial Management

A. Extension educators will teach topics such as setting financial goals, tracking expenses, preparing and using spending plans, organizing and maintaining financial records, obtaining health insurance, using credit wisely, reducing debt, guarding against identity theft, saving for the future, and using technology to manage finances using ongoing UI curricula, Smart Choice Health Insurance, and other curricula, PowerPoint lessons, and fact sheets including Dollar Decision$, and Credit Cents.
B. How to organize and maintain financial records will be taught with the new Financial Records Organization: Preparing for Emergencies and Disasters publication, PowerPoint, worksheets, and fact sheets.
C. The concepts of using credit wisely, credit card selection, credit reports, credit rating, and reducing or eliminating debt will be taught using the Credit Cents curriculum and fact sheets. The concepts of understanding your credit score will be taught using the training and materials from The Road to 850.
D. Identity Theft - what is it, how to avoid it, and what to do if you are a victim will be taught using Guarding Against Theft lesson and fact sheets.
E. The topics listed above will also be provided to thousands of Idahoans through one state and several county internet sites.

2. Financial Security in Later Life

A. Educators will team with local professionals to offer Legally Secure Your Financial Future, an ongoing curriculum that teaches how to organize important personal, financial, and legal documents; legal goals and how to establish them; Advance Directives and how to communicate wishes with others; how to select and work with an attorney; and estate planning and property ownership laws.
B. The Retirement Ready curriculum will the used to provide retirement planning education to baby boomers and others through seminars, publications, and media. Community and government partnerships will assist UI Extension to implement the programs.
C. The topics listed above will also be provided to thousands of Idahoans through the Personal and Family Finance Extension web site. Financial Security in Later Life education will be provided through the eXtension Legally Secure Your Financial Future consumer web site.
D. Non-titled property, what it is and distribution of property such as furniture, guns, jewelry, art, etc., will be explained using an ongoing curriculum titled Who Gets Grandma's Yellow Pie Plate?

3. Youth Financial Literacy

A. Preschool children and their parents will learn basic financial concepts when educators present Marlon Monkey Borrows Bananas and an ongoing curriculum, Money on the Bookshelf.
B. School-age youth will learn consumer and financial management concepts through ongoing and new 4-H CCS projects, a program titled Teens Credit Card, and new programs being developed on the topics of

credit and credit scores, i.e., Credit Score Millionaire.
C. Junior and senior high students will learn financial management concepts in school and youth group settings through the Northwest Youth Financial Education Program components and an ongoing experiential curriculum titled Welcome to the Real World.
D. The ongoing High School Financial Planning Program will be taught to high school students. The program teaches money management, borrowing, earning power, investing, financial services, and insurance. Extension personnel and credit union partners will train high school teachers how to implement the curriculum in the classroom.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Billboards
● Group Discussion	● Newsletters
● One-on-One Intervention	● TV Media Programs
● Other 1 (Train the trainer)	● Web sites other than eXtension

3. Description of targeted 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 attend classes/workshop/seminars, use personal and family finance publications, and access web site information and resources. Professionals who work with low-income audiences and those with financial challenges will be trained and/or provided with personal and family finance publications, curriculum, and website information and resources.
Financial Security in Later Life

• Adults will attend educational programs, utilize publications, and access web site information covering retirement planning, investing, government programs benefiting senior citizens, 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.
• Professionals who serve elderly clients will use publications, curriculum materials, website and/or training provided by Extension.
Youth Financial Literacy

• Teachers, youth group leaders, volunteers, parents, and youth will utilize web sites, publications, educational programs, and games.
• Teachers and youth group leaders will purchase selected Extension curricula for youth.
Underserved Audiences
Basic Financial Management

• Multi-cultural and low-income individuals will provide feedback and direction for educational programming and be identified as targets for information delivery.
• Individuals who are incarcerated or who are on probation will participate in financial education programs.
Financial Security in Later Life

• Multi-cultural and low-income individuals will provide feedback and direction for educational programming and be identified as targets for information delivery.

Youth Financial Literacy

• Professionals who work with multi-cultural and low-income youth will provide feedback and direction for educational programming and be identified as targets for information delivery.

• Youth who are enrolled in non-traditional educational settings will participate in Extension consumer and personal finance programs.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Newsletter articles published; print or electronic
- Popular Press articles
- Professional or paraprofessional trainings
- Classes, seminars, and workshops
- Websites developed or updated
- Lesson/curricula developed, published, distributed

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Appropriations changes
- Public Policy changes

Description

Topic Team success is dependent on a variety of factors including economic stability, natural disasters, public policy changes, government regulations, funding, competing public priorities, minority groups becoming proficient in the English language, and decision-makers continuing to support financial education. Translation of our personal finance publications into Spanish is a priority for the team. The Team is also committed to report Outcomes and Indicators in the strongest possible format.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluating the effectiveness of personal and family finance classes, workshops, and seminars will be accomplished by conducting post-tests, pre- then post-tests, or retrospective evaluations from program participants. In a few selected programs, three to six month follow-up surveys will be conducted allowing self-reporting by participants.
To determine the number of participants who increase awareness, gain knowledge, and intend to adopt recommended practices, we will survey attendees at the end of classes and workshops. Pre- and post-assessment tools and retrospective evaluations will be utilized. For selected programs, three or six month follow-up surveys will be conducted and analyzed.
The team will improve existing evaluation survey tools and work toward better data collection of participant behavior changes.

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Farm and Ranch Management

2. Brief summary about Planned Program

This program develops and provides unbiased information on the economics of existing and alternative crop and livestock production systems. We provide management tools and education to Idaho farmers, ranchers and agribusinesses that allows them to make informed management decisions, and to develop and/or maintain economically healthy, sustainable and profitable businesses that will support rural economies and rural communities.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

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

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Agriculture is the number one sector in Idaho's economy. In 2012 agriculture was responsible for generating $25.1 billion in sales (20% of Idaho's total), 124,000 jobs (14% of Idaho's workforce), and $9.1 billion in value added (14% of Idaho's GSP) according to an economic base analysis study conducted by the University of Idaho. Agriculture plays and even stronger role in Idaho's rural communities. The economic health of Idaho depends on a healthy agricultural sector.

Agriculture is an inherently risky business. With volatile commodity markets and rising input prices, Idaho farm and ranch families are caught in a cost-price squeeze that has driven many of them out of business. As price takers, it can be difficult for them to establish or maintain an economically sustainable business operation that can be passed to the next generation. Idaho farmers and ranchers need access to up-to-date farm management information and tools that will help them to identify financial problems, evaluate alternatives, and to develop a viable business plan with accurate financial statements.

2. Scope of the Program

- In-State Extension
- Multistate Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Agriculture is and will remain an inherently risky business that is susceptible to periods of severe financial stress. Volatile commodity prices and rising input prices will continue to put Idaho farmers and ranchers in a cost-price squeeze that only the efficient producers will survive. Producers need a better understanding of their major sources of risk and the tools and resources available to help them develop and evaluate appropriate risk management strategies. Idaho's farmers and ranchers must adopt cost efficient production practices that are based on maximizing profit, not production. Accurate and up-to-date cost of production estimates (enterprise budgets) are essential to this process.

2. Ultimate goal(s) of this Program

The overall goal of the farm and ranch management program is to provide unbiased information, tools and education to Idaho farmers, ranchers, financial institutions and agribusinesses that will allow them to make informed management decisions, to successfully manage their businesses, and to develop and/or maintain economically healthy, sustainable and profitable businesses that will support rural economies and communities.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	3.5	0.0	2.0	0.0
2018	3.5	0.0	2.0	0.0
2019	3.5	0.0	2.0	0.0
2020	3.5	0.0	2.0	0.0

2021	3.5	0.0	2.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

1. Farm and Ranch Production Management Economics
The focus of this program is to develop and to provide to producers costs and returns estimates for both traditional and alternative enterprises and traditional and alternative production systems, cost efficient production management strategies, and tools needed to evaluate the production efficiencies of their operations. Presentations will be given at traditional commodity schools, farm and ranch management schools, and other extension venues, such as the Lost River Grazing Academy.
2. Farm Management
This project will teach both existing and beginning Idaho farmers and ranchers business management skills needed to successfully manage their operations and to transition from one generation to the next. They need up-to-date management and marketing information and access to tools that will help them to identify financial problems, to develop and evaluate economically viable alternatives, and to develop a sustainable business plan with accurate financial statements. The focus of this program is on the delivery of basic farm management education through workshops and in-depth classes that are tailored to the needs of local producers.
3. Financial Condition of Idaho Agriculture
This program will develop an annual projection of the financial condition of Idaho agriculture based on cash receipts, revenue, expenses, and net farm income for Idaho's major commodities for the current year, as well as maintaining and presenting historical trend data. This information will be presented to the Idaho legislature; commodity groups and other interested stakeholders to help them better understand the trends impacting agriculture in Idaho and to help them develop policies that contribute to a strong agricultural economy.
4. Sustainability Through AgrAbility
The AgrAbility program provides assistance to help producers assess their situation and to either consider alternative enterprises, change their roles to more of a management perspective, and/ or utilize their abilities along with assistive technology to be productive in their operation. Farmers and ranchers with disabilities are at risk of being able to manage day to day operations due to physical or mental limitations.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention	● Newsletters ● TV Media Programs ● Web sites other than eXtension

3. Description of targeted 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.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Farm Management Schools
- Crop or Livestock Costs and Returns Estimates Published
- Media Contacts: print, radio & TV
- Workshops/presentations/classes/webinars at Commodity Schools/Conferences, Farm Management Schools, Idaho Legislature, or other appropriate venues
- One-on-one consultations: office visits, phone contacts, email
- Hits on Idaho AgBiz web site
- Popular press articles and commodity school proceedings

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

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. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

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. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

The availability of resources (personnel, appropriated funds and commodity commission funds) limits the offering of programs, specifically the farm management classes. The change from formula funds to competitive grants puts our ability to consistently provide a basic farm management program at risk, as do the recent budget cuts at the state and county level.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Surveys of participants at workshops to determine a gain in knowledge or the intent to change practices based on information presented.

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Food Safety

2. Brief summary about Planned Program

The Food Safety Topic Team will work on the following projects:
Consumer Food Safety Programs / Just in Time Food Safety / Preserve@Home -- Extension educators will answer food safety calls and offer classes and workshops on general food safety and food preservation topics.
Master Food Safety Advisor -- FCS Educators offer volunteer certification food preservation training at two levels:

- Master Food Safety Advisor
- Advanced Master Food Safety Advisor

The text for this program (which also supports all UI Extension food preservation training) will be extensively revised and updated.
Food Service Food Safety Training -- The Ready, Set, Food Safe and ServSafe curricula will be taught in high school FCS classes and upon request at other venues throughout the state.
Hand Hygiene Education -- Hand washing technique and effectiveness will be taught in a fun, 'hands-on' learning experience with the use of black light sensitive lotion (such as Glo-Germ or Glitterbug lotions) and a black light.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
308	Improved Animal Products (Before Harvest)	0%		15%	
311	Animal Diseases	0%		10%	
315	Animal Welfare/Well-Being and Protection	0%		10%	
501	New and Improved Food Processing Technologies	5%		15%	
503	Quality Maintenance in Storing and Marketing Food Products	20%		10%	
504	Home and Commercial Food Service	30%		10%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	30%		10%	
722	Zoonotic Diseases and Parasites Affecting Humans	5%		10%	
723	Hazards to Human Health and Safety	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Consumer Food Safety Programs / Just in Time Food Safety / Preserve@Home

- One-sixth of people are affected by foodborne illness
- At-risk groups are particularly vulnerable
- Consumers lack knowledge

Master Food Safety Advisor

- A large population of food preservers use risky practices
- Interest in home food preservation is increasing. According to industry data in 2011, home canning product sales rose nearly 35% over the three previous years.

Food Service Food Safety Training

- High percentage young people work in food service
- The state regulates how food sold to the public is handled
- Food businesses require trained workers

Hand Hygiene Education

- People do not wash as well or as often as they should to prevent illness
- Regular hand washing results in fewer sick days

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Extension
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Desired Outcome: Reduce foodborne illness.
Participants will need to learn: improved food handling and personal hygiene behaviors by consumer, food service and food industry audiences.
The Topic Team will deliver these outputs: classes, programs, workshops, one-on-one answering questions, county and health fair exhibits, newsletters, popular press materials, online programs, conference presentations, websites and social media.
In order to deliver the outputs, the Topic Team will need to invest the following resources: Extension faculty time; volunteer time; funds from program participants, state and federal; collaborations with other food safety professionals; educational materials (written materials, curricula, and equipment).

2. Ultimate goal(s) of this Program

Consumer Food Safety Programs / Just in Time Food Safety / Preserve@Home
Goal: Reduce foodborne illness. Increase confidence in food handling and in the safety of the U.S. food supply. Provide requested food safety and handling information.
Evaluation of success: The Team has data to show that 93% of those requesting food safety information intend to implement the information provided by Extension. Team members will collect information from callers regarding whether the call is quality or safety related, if the caller will use the information received during the call, and if the caller will use Extension in the future.
Master Food Safety Advisor
Goal: The incidence of foodborne illness related to food prepared at home will drop due to the increased knowledge base of home food preservers. The number of home food preservers with knowledge of safe food handling, preserving and storing practices will increase. Consumers will experience less food spoilage. Improve self-efficacy, self-confidence.
Evaluation: Outreach hours of Master Food Safety Advisors will be recorded.
Food Service Food Safety Training
Goal: Reduce the number of foodborne illnesses resulting from improper handling in food establishments.
Evaluation: Number of high school students receiving a food handlers' certificate will be recorded.
Hand Hygiene Education
Goal: Improve health due to fewer colds, flu, and foodborne illness because transfer of pathogenic organisms is reduced due to improved hand washing.
Evaluation: Number of students participating in hand hygiene education.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	3.7	0.0	2.0	0.0

2018	3.7	0.0	2.0	0.0
2019	3.7	0.0	2.0	0.0
2020	3.7	0.0	2.0	0.0
2021	3.7	0.0	2.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

1. Consumer Food Safety Programs / Just in Time Food Safety / Preserve@Home
One sixth of Idahoans are affected by food borne illness; some groups such as elderly, pregnant women and children are particularly vulnerable. Knowledge about safely storing and preparing food is declining as this information is omitted from school curricula. Annually about 6000 consumers call Idaho Extension offices for food safety information. Consumers who call Extension offices for food safety information, attend Extension classes, access one or more of the 29 Extension bulletins on food handling topics, and use the Extension food safety website are the target audience for these programs. As a result of these programs, consumers will experience less illness from foodborne pathogens and benefit financially through less spoilage of food.

2. Food Service Food Safety Training
Foodborne illness is an increasing concern for Americans who get nearly half of all meals from dine-in or take out restaurants. Those businesses also provide first jobs for more teenagers than any other industry. This program targets teens who prepare food for others, particularly in commercial establishments and FCS high school teachers who need to deliver food service food safety information to their students. Learning safe food handling skills reduces foodborne illness and qualifies teenagers to compete for jobs with greater responsibility and compensation.

3. Hand Hygiene Education
Hand washing is important in the prevention of foodborne illness, transmission of pathogenic bacteria and disease prevention, however, it is an often overlooked behavior. Studies support the need for behavior change as well as for effective hand washing education. Contagious disease outbreaks heighten the importance of this type of education. This program targets elementary age children, families and children at county fairs, and adults at health fair settings. Children and adults will practice improved hand hygiene behaviors and reduce the number of colds, flu, foodborne illness and other communicable diseases.

4. Master Food Safety Advisor
Interest in home food preservation has always been strong in Idaho and has recently been increasing because consumers want to save money, preserve garden produce, have more control over their food, and live more sustainably. These programs target consumers with interest in home food preservation and food safety topics, and particularly consumers who share knowledge with others. As a result of these programs, Idahoans will store and preserve food safely and access to food preservation information by the general public will be increased via volunteers.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods

● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● Web sites other than eXtension
● Demonstrations	

3. Description of targeted 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.
Master Food Safety Advisor: 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: Youth, Families and children at county fairs, adults at health fair settings.
Underserved Audiences
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. Offer information through a variety of methods--classes, social media, online, websites, newspapers/newsletters.
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. Offering scholarships, offering classes at no cost.
Food Service Food Safety Training: High school students in foods classes, Adult food service workers. Offered free of charge during public education hours.
Hand Hygiene Education: Elementary age children, Families and children at county fairs, adults at health fair settings. Offered free of charge in public venues.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of food safety calls answered - includes call to sec/MFSAs
- Number of new certified Master Food Safety Advisors.
- Number of re-certified Master Food Safety Advisors.
- Number of students taking Preserve-at-Home
- Students receiving a RSFS certificate.
- Number of participants in hand hygiene education program
- Number of people participating in food preservation classes.
- Number of individuals receiving ServSafe certification.
- Number of classes taught by MFSA volunteers
- Number of food preservation equipment safety checks (pressure gauge tests)

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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

Outcome # 1

1. Outcome Target

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. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

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. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

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. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

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. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 722 - Zoonotic Diseases and Parasites Affecting Humans

- 503 - Quality Maintenance in Storing and Marketing Food Products
- 723 - Hazards to Human Health and Safety
- 315 - Animal Welfare/Well-Being and Protection
- 311 - Animal Diseases
- 501 - New and Improved Food Processing Technologies
- 308 - Improved Animal Products (Before Harvest)
- 504 - Home and Commercial Food Service

4. Associated Institute Type(s)

- 1862 Research

Outcome # 6

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 723 - Hazards to Human Health and Safety
- 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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 7

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 503 - Quality Maintenance in Storing and Marketing Food Products

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 504 - Home and Commercial Food Service
- 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 8

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Competing Public priorities
- Populations changes (immigration, new cultural groupings, etc.)
- Other (public health)

Description

- Natural disasters or environmental: growing season and conditions
- Economy: increase in food preservation when economy is poor
- Other: public health issues (i.e., hand washing, disease prevention)

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

- Pre- and post-data collection
- Post quizzes/tests/evaluations
- Retrospective
- Follow-up evaluations

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Climate Change: Forest Management

2. Brief summary about Planned Program

The Forest Management Topic Team provides education and applied research supporting Idaho's forest owners, managers, loggers, businesses, producers, consumers, and other stakeholders. Team objectives are to provide effective training and educational resources to increase knowledge and encourage activities that ensure successful forestry best management practices.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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%		20%	
213	Weeds Affecting Plants	5%		15%	
215	Biological Control of Pests Affecting Plants	5%		20%	
216	Integrated Pest Management Systems	10%		15%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Idaho has some of the most productive forests in the Rocky Mountains. Over 41% of Idaho is forested, with approximately 11% of Idaho forests (2.3 million acres) belonging to family forest owners. Family forest acreage in Idaho has been increasing, due to forest product companies selling lands, former pasture or

marginal cropland being actively planted back into trees, and land naturally seeding back into forest after tillage stops. The number of Idaho family forest owners has been steadily growing (e.g., 21,700 owners in 1978, to 47,400 family forest owners in 1993). Family forest demographics are always changing, as family forestlands are bought, sold, subdivided and as industry forest lands are sold off.
Most logs from family forests are processed into wood products in Idaho, supporting living wage jobs in rural Idaho communities. Since 1992, family-owned forests have annually produced 25% of Idaho's timber harvest (much more in some communities) and are well positioned to continue supplying companies gearing up to use smaller logs and forest biomass, as it takes less time to grow smaller trees, and family forests are located closer to processing facilities. Family forests are also critical to water quantity and quality, wildlife, and many other public benefits since they tend to be more concentrated near key locations for ecosystem functions (e.g., along lakes, streams, and in low elevation habitats that are rare due to development).
There are conservatively over 500 professional foresters in Idaho working for public forest land agencies, forest industry and as consulting foresters. There are roughly 2,000 full- and part-time loggers in Idaho. A variety of new credentials have been developed to document these professionals development (e.g., The Society of American Foresters "certified forester" program and the Idaho Pro-logger program). Participation in Extension programs helps all of these individuals improve their skills in managing forests and other natural resources and meet continuing education requirements. K-12 teachers must also stay updated, and value research-based sources of forestry education to integrate into their classrooms.
Idaho counties have lost many natural resource based jobs and are looking for ways to develop economic opportunities to develop jobs in existing and new industries.
Inadequate knowledge of natural resource science often contributes to poor natural resource management decisions and policies, impacting Idaho's rural communities. Using information from the Idaho Department of Lands Idaho Forest Action Plan Resource Assessment (2010), Idaho Master Forest Stewards, the Idaho Forest Owners Association, the Association of Logging Contractors, and other stakeholders and partners, and critical issues and ecological drivers that influence Idaho forest management, we identified the following issues which will be the main focus of the forest management topic team:
Over-stocking, poor species composition, insects, diseases, climate change, and uncharacteristic wildfires threatening Idaho's forest health, productivity, and sustainability;
Natural resource professionals', loggers', and teachers' needs for opportunities to fulfill job requirements for continuing education, certification, and recertification credits that improve and enhance their understanding of natural resources management; and
Natural resource dependent communities' need to maintain existing businesses and develop new economic opportunities related to forests.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

• Targeted audiences need more information about currently identified threats and issues within forest systems.

• Ecological and biological concepts must be conveyed to enhance understanding of forest systems, presenting programming challenges that require delivery methods aligned to individual learning preferences.
• With a better working knowledge of identified threats and issues and recommended best management practices, targeted audiences can sustainably produce more wood fiber and simultaneously improve forest health and growth, wildlife habitat, and other values.
• When forest managers and operators understand the "spirit of the law" within forest practice act regulations, they will modify their practices to reach forest management goals.
• Idaho counties have lost many natural resource based jobs and are looking for ways to develop economic opportunities by maintaining existing forest-based businesses and developing new ones.

2. Ultimate goal(s) of this Program

The goal of the forest management topic team is to improve the knowledge and skills of target audiences so they can improve forest health and vigor through recommended best forest management practices and sustain the full spectrum of benefits that society values from Idaho's forests, including economic opportunities.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	3.6	0.0	2.0	0.0
2018	3.6	0.0	2.0	0.0
2019	3.6	0.0	2.0	0.0
2020	3.6	0.0	2.0	0.0
2021	3.6	0.0	2.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

1. Forest and Natural Resource Workforce Development
To support employment in natural resource industries and businesses Extension professionals will offer professional development and certification programs for those working in forest related occupations.
2. Forest and Natural Resource-based Economic Development
To promote economic development in Idaho's rural counties, Extension professionals will provide programming to help Idaho landowners and small business entrepreneurs gain knowledge and skills needed to better take advantage of economic opportunities related to forest lands.
3. Forest Productivity and Sustainability
To improve the productivity and sustainability of Idaho's working forests, natural resource Extension professionals will offer forest owners and managers programming to help them increase their knowledge and skills to achieve their forest management goals.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● Web sites other than eXtension
● Demonstrations	● Other 1 (e-mail)

3. Description of targeted audience

Target Audiences

The primary audiences for this topic team are:

- Family forest owners
- Loggers
- Natural resource professionals
- Fire and emergency services professionals
- Landscape architects, designers, and contractors
- Extension educators, master forest stewards, master gardeners
- Teachers/educators, and youth

Underserved Audiences

Forest owners, loggers, and natural resource professionals south of the Salmon River are underserved by this topic team because of lack of local faculty there to build programs. There are conservatively over 1 million acres of family forest land south of the Salmon River and thousands of family forest owners. Numbers of family forest owners will very likely increase as industrial forest owners in this part of the state continue to sell forestland to individuals.

Because most forest owners in Idaho are Caucasian, Extension programs for family forest owners do not usually generate may contacts with racial or ethnic minorities. Native Americans sometimes participate in UI Extension forestry programs and we will continue to work with tribal representatives to increase that. To the extent natural resource professions are successful at recruiting larger numbers of women and minorities we will start to serve greater numbers of them as well. Currently many migrant Hispanic workers are employed by planting and thinning contractors. If here is sufficient demand from these groups for our workshops or publications, we will offer them in Spanish language forms.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of workshops, field days, etc. (reported by program organizer, if organized by UI Extension)
- Number of participants in workshops, field days, etc. (reported by program organizer, if organized by UI Extension)
- Number of articles in popular press
- Number of hits on U-Idaho Extension Forestry website and YouTube videos; number of likes on U-Idaho Extension Forestry Facebook page; number of webinar attendees
- Continuing Education hours for participants (reported by program organizer, if organized by UI Extension)

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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

Outcome # 1

1. Outcome Target

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. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 213 - Weeds Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Research

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 122 - Management and Control of Forest and Range Fires
- 112 - Watershed Protection and Management
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 122 - Management and Control of Forest and Range Fires
- 123 - Management and Sustainability of Forest Resources
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 216 - Integrated Pest Management Systems
- 123 - Management and Sustainability of Forest Resources

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 216 - Integrated Pest Management Systems
- 123 - Management and Sustainability of Forest Resources

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 7

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 123 - Management and Sustainability of Forest Resources
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

New threats that threaten forest health (e.g., an insect or disease epidemic) and/or productivity could shift the emphasis of this topic team. Continued receipt of grant funds (e.g., for Idaho Forest Stewardship program) is also essential to the completion of many of the programs described in this plan. Continued or increased funding from the Renewable Resources Extension Act (RREA) funding is also critical to several activities described in this plan. Cuts to UI Extension state budgets or county budgets supporting UI Extension efforts would affect programming described here.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation study methods include the number of direct and indirect contacts, web hits, event attendees, and articles and publications written and distributed.
Most of the programs described in this document will include some type of exit evaluation that collects data on forest acres owned or managed, previous participation in forestry education or assistance programs, whether they plan to implement specific improved management practices as a result of attending the program, and a retrospective rating of their knowledge of the program material before and after the program.
Idaho Master Forest Stewards program evaluation is built into the Participatory Action Research (PAR) structure of the program. IMFS volunteers meet twice annually, and a major piece of these meetings is peer-peer sharing, which includes discussions of program effectiveness and outcomes. Idaho Master Forest stewards also complete a 148 item pre-post test as part of their training.
Additional evaluation of the effectiveness of these programs will come from meetings with the Idaho Lands Resource Coordinating Council (ILRCC), the Idaho Forest Owners Association, the Associated Logging Contractors of Idaho, the Idaho Sustainable Forestry Initiative State Implementation Committee, and the Idaho Statewide Logger Education Committee.
Information gathered will be used in annual reporting as well as to write Impact Statements and popular reports to be used by Extension and other personnel for promoting Cooperative Extension, University of Idaho Extension Forestry, and the Renewable Resource Extension Act (RREA) to key local, state, and federal decision makers and grantors.
Efforts will be made to secure funding to assess larger, long-term impacts, outcomes, and public values (e.g., the economic and ecological impact of people reducing forest stocking as a result of extension programs). Where needed, extension programming may be revised to generate and document more robust extension forestry program outcomes.

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Global Food Security and Hunger: Health & Human Nutrition

2. Brief summary about Planned Program

Thirteen Family & Consumer Sciences (FCS) extension faculty contributed to the 2017 Health and Nutrition five-year Plan of Work. It contains adult and youth educational experiences within two projects: (1) Eat Smart Idaho and (2) Healthy Living. The Eat Smart Idaho audience will include individuals who participate in the USDA funded Expanded Food and Nutrition Education Program (EFNEP) and the Supplemental Nutrition Assistance Program Education (SNAP-Ed). The Healthy Living project focuses on nutrition and physical activity classes that include: Meal Time in Less Time, Seafood at its Best, Dietary Guidelines for Americans and MyPlate (promoting fruits and vegetables, whole grains, low-fat dairy, lean protein, healthy fats), Fit and Fall Proof, Kick Your Boot Camp, Run/Walk for Fun Pedometer Fitness Challenge, Strong Women, Balanced Living, Food Preparation classes, and 4-H Food Smart Families.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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%		5%	
313	Internal Parasites in Animals	0%		5%	
701	Nutrient Composition of Food	10%		0%	
703	Nutrition Education and Behavior	30%		20%	
704	Nutrition and Hunger in the Population	15%		10%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	0%		10%	
722	Zoonotic Diseases and Parasites Affecting Humans	0%		5%	
723	Hazards to Human Health and Safety	10%		15%	
724	Healthy Lifestyle	30%		20%	
903	Communication, Education, and Information Delivery	5%		10%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

There is good news and bad news about Americans' health status and eating habits. The good news is that Americans have decreased their consumption of full-calorie soda by 25% (since the late 1990s) and their calorie intake by approximately 180 calories/day in (from 2220 calories per day in 2003 to 2,134 calories). The bad news is that their calorie intake is too high, based on the most recent 2014 National Health and Nutrition Education Survey (NHANES) data which shows that obesity levels continue to increase. In 2013-2014, about 38 percent of American adults were obese, up from 35 percent in 2011 and 2012. Obesity among young people (ages 2 to 19) remained unchanged at 17 percent, from 2011-2014. Even though Americans have slightly decreased their calorie intake, they are still eating too many foods that are high in fat, sodium, and sugar and not enough fruits, vegetables, whole-grains, lean proteins, and low-fat dairy foods. Also, physical activity levels are still low, with 2013 date indicating that approximately 20.4% of adults aged 18 and over met the 2008 federal physical activity guidelines for both aerobic activity and muscle strengthening.
The priorities for the Health and Nutrition Topic Team are to:

- Increase awareness of health and nutrition programs by promoting Eat Smart Idaho to adult and youth Idahoans.
- Teach adults and youth how to live healthy in order to prevent overweight and obesity by increasing their intake of fruits and vegetables, whole grains, low-fat dairy, and be physically active.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

• Consumption of fruits and vegetables, whole grains, and low-fat dairy products are an indicator of an overall healthy diet.
• If adults complete a series of classes or other educational experiences that contain nutrition and physical activity messages, they will increase their knowledge and use this knowledge to improve their eating habits and level of physical activity.
• If adults and youth complete a single class or educational experience on nutrition or physical activity, they will increase their awareness and/or knowledge of this topic.
• If adults attend a physical activity class or educational experience, they will learn the benefits of physical activity and become more physically active.
• The eating and physical activity behaviors of adults will influence the eating and physical activity behavior of youth.
• Increased time spent in physical activity will improve health.

2. Ultimate goal(s) of this Program

Short-term goals include changes in knowledge, attitude, motivation and awareness.

• Changes in nutrition knowledge will be measured in adults and youth who complete multiple nutrition educational experiences that cover fruits and vegetables, whole-grains, low-fat dairy products, and other healthy beverages.
• Awareness will be measured by number of people that participate in educational experiences in all the projects.

Medium-term goals include changes in behavior.

• Changes in nutrition behaviors will be reported by youth and adults who complete multiple nutrition educational experiences that cover fruits and vegetables, whole grains, low-fat dairy products, and other healthy beverages. Changes in physical activity behaviors will be measured by participants reporting time spent in physical activity.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890

2017	6.9	0.0	2.0	0.0
2018	6.9	0.0	2.0	0.0
2019	6.9	0.0	2.0	0.0
2020	6.9	0.0	2.0	0.0
2021	6.9	0.0	2.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

1. Eat Smart Idaho

This program targets vulnerable or underserved populations and childhood obesity. It is estimated that 16% of Idahoans live in poverty. Feeding America estimates that 15.8% of Idaho's total population (252,000 individuals) is food insecure (having a lack of access to the quantity and quality of food needed to achieve an active, healthy lifestyle), while 21.6% of Idaho's children are food insecure (91,730 children) Highest rates of obesity in the United Sates are found among the lower-income groups In Idaho, 62.3% of adults are either overweight (BMI greater than or equal to 25) or obese Idaho reaches the vulnerable or underserved populations in 31 counties through Eat Smart Idaho. Eat Smart Idaho, funded through USDA, target mainly adults and youth. Adults in Eat Smart Idaho learn how to eat healthy, plan menus and stretch their food dollars. Youth in Eat Smart Idaho learn healthy eating principles and physical activity is promoted as methods to target childhood obesity. Adults and youth who attend these programs will improve their eating habits, and their nutritional status,

2. Healthy Living

Many Americans have poor nutritional habits, are inactive, are overweight or obese and have difficulty managing stress. Researchers have found that Americans don't consume enough fruits, vegetables, whole-grains, and low-fat dairy products and consume too much fat, sugar, salt, and calories. The University of Idaho Extension combats these issues through Eat Smart Idaho and classes that target healthy living. Participants learn the national USDA Dietary Guidelines for Americans and Choose My Plate and can participate in the Tufts University nutrition and physical activity program called Strong Women. The target audience is youth, adults, and the elderly. Intended outcomes include improved eating habits, increased physical fitness and strength, and greater life balance. Parents who learn how to adopt a healthy lifestyle may be role models for their children. Anyone who follows a healthy lifestyle may decrease or prevent the likelihood of developing certain chronic diseases such as heart disease, diabetes or osteoporosis.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods

● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations	● Public Service Announcement ● Billboards ● Newsletters ● TV Media Programs ● Web sites other than eXtension ● Other 1 (brochures) ● Other 2 (nutrition blogs)

3. Description of targeted audience

Target Audiences
The target audience varies by program or project. For the Eat Smart Idaho project, which is funded through USDA, UI Extension reaches adult and youth individuals in 31 counties. The target audience for the Healthy Living project includes youth, adults, and elderly who have poor nutritional habits, are inactive, overweight or obese, and adults who are role models who would influence youth and others to promote healthy living.
Underserved Audiences
The Eat Smart Idaho project reaches the underserved population in 31 counties through EFNEP and SNAP-Ed which are funded through USDA. The individuals who benefit directly from these programs are low-income adults, youth, and elderly. Adults learn how to eat healthy, plan menus, and stretch their food dollars. Youth learn healthy eating principles and physical activity is encouraged as a way to target childhood obesity. Adults 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

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Eat Smart Idaho will conduct classes to adults and youth.
- FCS Extension faculty will conduct physical activity classes to adults and youth.
- FCS extension faculty will use social media platforms to provide health and nutrition information. The target will be the number of followers.
- FCS extension faculty will conduct nutrition classes to adults and youth.

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 701 - Nutrient Composition of Food
- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

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. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 311 - Animal Diseases
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 701 - Nutrient Composition of Food
- 722 - Zoonotic Diseases and Parasites Affecting Humans
- 723 - Hazards to Human Health and Safety
- 313 - Internal Parasites in Animals

4. Associated Institute Type(s)

- 1862 Research

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 723 - Hazards to Human Health and Safety
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle
- 701 - Nutrient Composition of Food
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle
- 701 - Nutrient Composition of Food

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

External factors that could affect the success of the Health and Nutrition Topic Team include the decrease in number of FCS extension educators in the state and changing state demographics. Due to the decrease in the number of FCS extension educators available to conduct programming, there has been a shift in priorities to ensure that our nutrition and health programs are delivered to individuals who need them the most. Nationally, the U.S. government could decrease funding to programs that target low-income and underserved audiences, resulting in a decrease in the size of our Eat Smart Idaho program which is funded by USDA. With the increase in the Hispanic population and more refugees coming into Idaho, Extension programs must reach out to these individuals and develop culturally appropriate materials.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Data will be collected from the Eat Smart Idaho and physical activity programs using pre and post surveys.
Data will be collected from social media platforms on number of participants/followers to measure our social reach.
Data will be collected from other health and nutrition programs.

V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

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

2. Brief summary about Planned Program

Environmental quality is an interdisciplinary program that seeks to put into practice new knowledge that supports profitable agricultural industries while protecting and enhancing the environment. Areas of emphasis include agriculture water conservation and water use efficiency, adaptation strategies for variable or changing climate, water quality protection from agricultural chemicals and from organic and inorganic nutrients, and protection of soil, air, and other natural resources from potentially degrading agricultural pursuits. Among the agricultural practices that are most relevant to protecting and enhancing environmental quality are irrigation, fertilization, management of manures and other agricultural wastes, and pest management practices.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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%		10%	
111	Conservation and Efficient Use of Water	10%		10%	
132	Weather and Climate	10%		10%	
133	Pollution Prevention and Mitigation	10%		10%	
205	Plant Management Systems	10%		10%	
307	Animal Management Systems	10%		10%	
312	External Parasites and Pests of Animals	0%		5%	
403	Waste Disposal, Recycling, and Reuse	10%		10%	
405	Drainage and Irrigation Systems and Facilities	10%		5%	
601	Economics of Agricultural Production and Farm Management	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Dairy production currently stands as the single largest agricultural pursuit, followed in close order by beef production and then by a diverse array of irrigated crops including potatoes, sugar beets, small grains and many others. In order to be profitable, agricultural enterprises need to balance the costs for irrigation, fertility management, pest management, and waste management with the potential to increase productivity. At the same time, growers need to avoid adverse impacts to soil, water and air resources if they are to remain socially and environmentally sustainable. The role of University of Idaho Extension is to help identify, create and teach stakeholders about best practices that lead to profitable, sustainable agricultural production.

Idaho agriculture depends on an abundant, inexpensive supply of water. The primary water source is winter snowpack. Even where groundwater is the primary source for water, the level of snowpack influences the rate of recharge for those aquifers that are pumped to support crop and animal agriculture. In times of uncertain climate change, there is much to learn about how to adapt to variable, changing and unpredictable levels of annual snowpack. Adaptation measures may include deficit irrigation, changes to the distribution of water allocated to different crops based on their consumptive use characteristics and crop value, and selection of different or additional crops suitable for different climates.

Recent regulatory decisions made by EPA indicate that pesticide use and potential contamination to ground and surface waters is a major concern. The use of pesticides is a pest management tool for commercial producers, and important to their economic well-being. Therefore, educational efforts on the safe and efficient use of pesticides to help prevent water contamination are necessary.

Effective management of livestock wastes is important for air and water quality. The current dairy herd in

Idaho, which stands at 550,000 head, excretes an estimated 80,300 tons of nitrogen and 13,800 tons of phosphorus each year as manure. This significant supply of nutrients can be beneficial as an inexpensive and soil building alternative to chemical fertilizers, but can also degrade water quality by causing health problems and by triggering eutrophication in waterways, and impact air quality through ammonia, particulate matter, nitrous oxides, and other greenhouse gases emissions.
Extensive natural resource development, such as timber management and mining, can also affect water quality conditions. Along with nutrient concerns, these altered landscapes are often times affected by sedimentation and increased solar loading to streams, which can have detrimental impacts on fish. The fishery population in Idaho is important both to the state's economy and to the citizens and tourists that enjoy the benefits of clean and thriving waterways. Strategies on how to monitor water quality and sustainable practices targeted towards conserving resources are a necessity for both landowners and natural resource professionals.
After dust storms triggered an 18-car pile-up and several highway closings in the spring of 2012, Idaho growers have been seeking out solutions to prevent severe wind erosion soil losses from their fields. In order to prevent wind erosion, growers must consider methods that keep their soils covered with plant material when field is not in production. These solutions include conservation tillage and the inclusion of cover crops in their rotation. Information on how to implement these practices in Idaho's landscapes is greatly needed by growers.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Both water quality and quantity will continue to be issues that not only impact human health and safety within the state but are key to the future of economic development. We assume that adequate funding will continue for water conservation, environmental quality, and IPM programs at the Land Grant Universities. We also assume that USDA Farm Bill incentives will continue for water quality protection, pest management, nutrient management, and environmental quality programs
Successful outcomes resulting from educational programs assume that:

- Producers will be willing to adopt new practices
- They will be motivated by potential increases in financial returns
- Less fertilizer will be used more efficiently
- Environmental Quality Incentive Program (EQIP) certification continues
- Cooperation with government agencies will continue
- Fewer fines are levied against dairies because of increased compliance
- Reliance on innovative and progressive producers to set new standards
- Dissemination efforts will reach the people that need the information the most

2. Ultimate goal(s) of this Program

The ultimate goal of the SWWAM program is to support a robust and profitable agricultural and natural resource industry that is in harmony with a high quality environment and with the needs and expectations of a rapidly increasing population. This will be accomplished through an integrated approach to research and education about best management practices for agricultural water, natural resource development, pesticide applications, nutrient and waste management, integrated pest management strategies and related topics that impact soil, air, and water resources.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	4.6	0.0	9.0	0.0
2018	4.6	0.0	9.0	0.0
2019	4.6	0.0	9.0	0.0
2020	4.6	0.0	9.0	0.0
2021	4.6	0.0	9.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

1. Nutrient and agricultural waste management

- Nitrogen management of fertilizers and animal manures for the prevention of degraded groundwater quality, yield losses, and financial losses
- Phosphorus loading potential from animal manures to prevent degradation of surface water quality
- Wind erosion prevention through use of conservation tillage and cover crops
- Nuisance dairy odors and environmentally hazardous gas emissions from dairies
- Effective dairy waste treatment through composting and other biological methods
- Field applications of manure for greatest crop nutrient use efficiency
- Other impacts of plant nutrients besides N and P on plant health and crop production
- Broad-base extension/outreach efforts in nutrient and agricultural waste management

2. Water Quality

- Protection of Idaho's water resources with the use of pest management practices
- Community involvement efforts in water quality protection
- Sediment erosion prevention preserve watersheds, Idaho streams, and surface water quality
- Impacts of agriculture on water quality degradation related to nitrate and phosphate pollution
- General extension/outreach efforts in water quality
- Control of aquatic nuisance species to prevent issues such as disruption of native aquatic habitats, clogging of irrigation systems, etc.

3. Water Quantity

- Preserving Idaho's limited water resources through irrigation water use efficiency
- Shifts in crop selection and water management in response to climate change

- Shifts in snow accumulations and spring runoff, due to climate change

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● One-on-One Intervention ● Demonstrations	● Newsletters ● Web sites other than eXtension

3. Description of targeted audience

Target Audiences

- 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

Underserved Audiences

- Spanish-language programs and materials developed and delivered for Hispanic workers
- Develop training on nutrient and waste management issues and BMPs specifically designed for small acreage and small volume producers.
- Conducting educational programs for Native Americans.
- Serving senior populations

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Workshops, seminars, and presentations to producer groups
- Applied and basic laboratory and field research experiments
- Newsletters distributed (number of issues) and number of articles submitted for other newsletters
- Tours and field days
- Professional presentations; invited and volunteer
- CCA credits offered for participation in courses

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems
- 133 - Pollution Prevention and Mitigation
- 405 - Drainage and Irrigation Systems and Facilities
- 205 - Plant Management Systems
- 601 - Economics of Agricultural Production and Farm Management
- 101 - Appraisal of Soil Resources

- 102 - Soil, Plant, Water, Nutrient Relationships
- 403 - Waste Disposal, Recycling, and Reuse
- 111 - Conservation and Efficient Use of Water
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

The plan of work we are submitting is based on conditions in 2015. None of the team members is 100 percent certain how long these conditions will exist in the future. For example, we do not know how

the rapidly changing demographics in Idaho will impact the environmental, economic, and social aspects of the Sustainable Production and Pest Management Systems addressed by this plan of work. We do not know when State/Congressional priorities will change and therefore affect the funding levels needed to carry out these programs, or if continuing climate changes will cause changes in commodities that can be profitably produced.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

The effectiveness of the water and environment topic team will be evaluated with the use of several different evaluation instruments:

- Pre and Post tests will be used to evaluate program impact
- Survey instruments (both electronic and paper format) will be used to evaluate impact on program participants
- Number of visits by participants to our program websites will be tracked over time
- Number of clientele adopting practices taught in programs

V(A). Planned Program (Summary)

Program # 12

1. Name of the Planned Program

Global Food Security and Hunger: Potatoes

2. Brief summary about Planned Program

Potatoes are the single largest crop produced in Idaho in terms of gross revenue, and are grown in rotation with small grains, sugar beets, alfalfa, corn, and other crops. Idaho grows approximately 325, 000 acres of potatoes with a crop value of approximately 1 billion dollars. It is essential that growers have access to information regarding best management practices for successful implementation of an integrated systems approach to potato production. The efficiency of such an approach not only impacts potato yield, quality, and revenue; but also affects the environment in relation to soil and water quality and nutrient cycling. Educating growers and those who advise them as to systems and technologies that are more efficient is beneficial to the Idaho agricultural community, as well as the general public. Based on stakeholder input from local and statewide industry/grower advisory groups, we are focused on developing an economically and environmentally sustainable potato industry by developing programs that include basic and applied research that is communicated to the potato industry through demonstrations, seminars and workshops at conferences, field days and grower meetings, as well as through print and electronic media.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

The Idaho potato industry has changed dramatically over the last decade, and continues to change at a rapid rate. These changes include adapting to changing consumer preferences such as providing different varieties. Producers are also faced with adopting newer production practices that lead to better utilization of resources. Conventional pesticides remain an integral part of managing diseases, weeds, insects, and other pests in potatoes, but food safety and environmental concerns must be taken into consideration. Producers need to adopt production practices that lead to a quality product that is acceptable to the end users. Issues that need to be addressed include:

Short term issues- Potato producers and others in the potato industry need to be continually updated on information that is immediately needed, or information that is needed in general to produce a quality potato crop. Growers need information on managing crops in short water years. They also require timely information on the monitoring of and control of new pests, such as zebra chip and Dickeya or outbreaks of known pests such as PVY and late blight. Input costs, such as fuel and fertilizer and crop protection products fluctuate making it difficult to keep production costs down. The potato industry also faces the potential loss of crop protection products due to regulation and/or pest resistance issues.
Intermediate term issues- Pest management strategies must be modified and/or developed so they are sustainable within the context of limited crop choices and against the backdrop of increasing financial and production risks. Variety-specific management recommendations need to be collated and properly disseminated for the integration of new varieties.
Long-term issues- Cost of production efficiencies require that the potato industry adopt technologies that permit growers to remain competitive and profitable. However, current varieties require high levels of

inputs, which reduce potential return to the grower and increases the possibility of negative impacts on the environment. New varieties need to be well adapted to production practices and must maintain quality in long term storage. Additionally, production practices must be continually evaluated and possibly modified to incorporate new varieties that have demonstrated potential to provide growers with positive returns. Short potato rotations that rely on pest protection products have the potential of increasing pest problems. Increasing competition for water from non-agricultural users will mandate better use of water supplies. Public opinion about the health risks posed by pesticide residues makes food crops like potatoes increasingly vulnerable to shifting consumer demands. Pesticides can be a significant portion of potato production costs, and loss of pesticides resulting from the Food Quality Protection Act and replacement with more expensive alternatives will further constrain profits. These input cost concerns are compounded by potential pesticide resistance developing in most pests of potatoes. The continued availability of high quality, productive seed potatoes is also crucial. Management in field, storage, and packing/processing need a continuous evaluation in order to achieve the most efficient and sustainable high-quality crop.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

The potato industry continues to have new challenges that influence how the entire industry conducts business. These challenges range from changing consumer preferences, new pests affecting production, cultural management issues, food safety issues, environmental concerns, pests developing resistance to control measures, and other issues. To meet the concerns and challenges faced particularly by potato producers requires the continual development of new technology and dissemination of information to alleviate detrimental consequences to the potato industry as a whole. Efforts in the potato program are designed to develop new information as needed to maintain a profitable and sustainable potato industry in Idaho, which is believed to be wanted by the potato industry. To maintain a sustainable industry, potato producers and others need to adopt new information and technology. The information and new technology will be delivered to those needing the information through various transfer methods such as conferences, field days, websites, or written media. Developing new technology and delivering the information to the potato industry requires investment of time and money from various sources including public and private entities. This plan addresses issues and concerns, but adoption of the new technology or new/modified management strategies is beyond the scope of this plan. Innovative and progressive producers that are willing to incorporate new technologies will be required for the adoption of these technologies by the rest of the industry. Evaluating the effectiveness of the plan may be addressed by evaluating case studies.

2. Ultimate goal(s) of this Program

It is the goal of the potato team to deliver essential information to growers regarding best management practices for an integrated potato cropping system. The efficiency of this system not only impacts potato yield, quality, and revenue; but also affects soil and water environments and nutrient cycling. The potato team's main focus is to create an economically and environmentally sustainable potato industry by

developing programs that include basic and applied research that is communicated to the potato industry through demonstrations, seminars and workshops at conferences and grower meetings, and also disseminated through print and electronic media.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	4.4	0.0	11.0	0.0
2018	4.4	0.0	11.0	0.0
2019	4.4	0.0	11.0	0.0
2020	4.4	0.0	11.0	0.0
2021	4.4	0.0	11.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

1. Food Quality and Safety

There is tremendous demand and expectation by consumers for high quality potatoes and potato-based products. This expectation includes the necessity of a strong food safety program ensuring safe and sustainably grown and handled potatoes. Providing research-based information to the potato industry regarding best production and storage management practices for currently grown and future potato varieties to achieve consumer mandated quality is necessary. Advancing knowledge in potato quality and safety will allow Idaho potato producers, fresh pack operations and processors to supply a high quality potato to local, national and international consumers.

2. Integrated Pest Management

Potatoes, the single largest crop produced in Idaho in terms of gross revenue, are vulnerable to a long list of devastating pests. Idaho potato producers and the extension educators, field agronomists, consultants and agricultural professionals who advise them need the continual development and dissemination of new integrated pest management (IPM) technology by targeted research and extension programs to alleviate detrimental consequences to the potato crop and industry as a whole.

3. Production and Economics

Idaho leads the nation in potato production, producing approximately 30 percent of the total U.S. crop. Potatoes are Idaho's most valuable crop, accounting for 28% of crop cash receipts in 2015. Potatoes are an expensive crop to produce. The cost to grow, harvest and sort (storage not included) ranged between $2,600 and $3,700 per acre. Storing the crop to the end of May would add another $500-$700 to these costs. Producers need to adopt production practices that minimize cost, while still producing a high quality product that is acceptable to the end users. Improving the competitiveness of the Idaho potato industry will require producers to adopt management practices that optimize the efficient use of pesticide, fertilizer and irrigation inputs. The economic impact of diseases, disorders and sub-optimal quality needs to be calculated into management recommendations and decisions. Educating growers and those who advise them about improvements in potato production technology will help move the industry in a direction that is economically and environmentally sustainable.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations	● Public Service Announcement ● Newsletters ● TV Media Programs ● Web sites other than eXtension

3. Description of targeted audience

Target Audiences
Target audiences are potato producers, field agronomists, consultants, industry representatives and Extension and research personnel.
Underserved Audiences
Spanish-speaking population in Idaho potato-producing areas make up a large percentage of the potato work force, and is potentially underserved in educational opportunities. For the past 15 we have offered a workshops at the Idaho Potato Conference in Spanish. Some extension materials are translated into Spanish for dissemination, but opportunities for additional material is available.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Seminars, workshops and field day presentations
- Trade Journals
- Field Days
- Individual Consultations
- Graduate Students
- Workshops
- Email Information Dissemination
- Potato Costs and Return Estimates

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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 Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 204 - Plant Product Quality and Utility (Preharvest)
- 202 - Plant Genetic Resources
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 102 - Soil, Plant, Water, Nutrient Relationships
- 216 - Integrated Pest Management Systems
- 603 - Market Economics
- 212 - Diseases and Nematodes Affecting Plants
- 205 - Plant Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 216 - Integrated Pest Management Systems
- 212 - Diseases and Nematodes Affecting Plants

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 603 - Market Economics
- 212 - Diseases and Nematodes Affecting Plants
- 205 - Plant Management Systems
- 204 - Plant Product Quality and Utility (Preharvest)
- 216 - Integrated Pest Management Systems
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 102 - Soil, Plant, Water, Nutrient Relationships
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 202 - Plant Genetic Resources

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

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. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 204 - Plant Product Quality and Utility (Preharvest)
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 212 - Diseases and Nematodes Affecting Plants
- 205 - Plant Management Systems
- 102 - Soil, Plant, Water, Nutrient Relationships
- 603 - Market Economics
- 202 - Plant Genetic Resources
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Adoption of some new practices may include investment in equipment. Producers will not and cannot invest in new equipment if they do not have the money for the investment. Many factors outside the influence of this potato team play a significant role in the economic status of the potato industry. Adoption assessment measures may not necessarily be representative of the industry. Resistance to change, especially when livelihoods are at stake, can significantly affect adoption of new management techniques and the subsequent measurement of team outcomes.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

To determine the number of potato producers adopting practices, we will survey attendees at appropriate meetings. Anecdotal information may be collected during on-farm visits or at other meetings discussing practices being adopted by potato producers in which the producer learned of the information developed by the potato team, and it was presented at a workshop or seminar, or the information was disseminated via written format.

V(A). Planned Program (Summary)

Program # 13

1. Name of the Planned Program

Global Food Security and Hunger: Small Acreages and Community Food Systems

2. Brief summary about Planned Program

Members of the Small Acreages and Community Food Systems Topic Team engage with Extension and University colleagues, agencies, organizations, landowners and producers to conduct applied research and deliver education that addresses issues related to land stewardship, scale-appropriate livestock and crop production, marketing, and local food systems.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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%		25%	
111	Conservation and Efficient Use of Water	10%		10%	
202	Plant Genetic Resources	10%		25%	
205	Plant Management Systems	20%		25%	
212	Diseases and Nematodes Affecting Plants	15%		10%	
602	Business Management, Finance, and Taxation	10%		0%	
604	Marketing and Distribution Practices	25%		5%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Small farms account for 91 percent of all farms in the United States. According to the 2012 Ag Census, 75 percent of Idaho's 24,400 farm operations sold less than $50,000 in agricultural products and 57 percent had sales of less than $10,000. It is important to understand the attributes and characteristics of these farms and the role they play in the changing structure of U.S. agriculture and the Idaho economy.
In recent years, prices of many Idaho commodity crops have remained stagnant or decreased while the costs of farm inputs have risen. Many Idaho farmers want to diversify their crops and/or their markets. This

may include growing specialty fruits and vegetables, custom meat, poultry, dairy and eggs, producing medicinal plants, herbs or cut flowers, processing value added products, marketing directly to consumers or specialty retail outlets, or converting to certified organic production. There is a demonstrated demand for applied research, outreach and educational information for small farm producers to help them begin new enterprises, expand existing businesses and/or remain profitable.
Much of Idaho's population growth has occurred in and around urban areas, with many communities experiencing an increase in the number of new buyers purchasing small rural and semi-rural acreages. These land parcels vary in size from ½ to 40 acres. The landowners may have plans to start small farm enterprises but most simply wish to pursue and enjoy a rural lifestyle. They often keep horses, cattle, chickens or other livestock and possibly raise hay, orchard crops or a large garden. These are typically for personal use rather than for monetary profit.
Priorities of small acreage landowners are diverse. Newcomers often need help with basic land management information such as soils, water quality, weeds. Many of these acreage owners know little about land, crop, garden, or livestock management and often seek help in management of their property. Consequently, demand for assistance in crop production, pasture management, forestry and weed management has increased.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Small scale specialty crop production and emerging models in farm to fork, farm to school, and farm to institution have potential to strengthen local food systems and create economic opportunities. Additionally, Community Supported Agriculture, farmers markets, and other direct to consumer marketing strategies are providing novel entrepreneurial niches for farmers while simultaneously increasing urban access to healthy and affordable food. However, each of these models or marketing strategies require navigation through increasingly complex regulatory, political, social, economic, and agronomic situations. University of Idaho Extension is uniquely positioned to lead, educate and facilitate.
To support the growth and success of food systems initiatives in their communities, Extension faculty will work with individuals, groups and organizations to lead, facilitate and mentor stakeholder-driven projects across Idaho. Projects may include food assessments and research, hunger relief efforts, development of farmers' markets, food hubs, small scale processing facilities, feasibility studies, creation of grower organizations, or even community and school garden activities. These efforts may require considerable inputs of time, travel, expertise, facilitation and leadership from Extension professionals.
To increase production and marketing of high value farm products by local producers, growers will need to seek information, invest in the land and equipment needed, and put forth the effort to grow and market the products. They will need to learn what can be grown or produced and what is needed for production. Extension programs can provide this information through applied research, demonstration, conferences, field days, tours, courses, short courses, workshops, online content delivery, publications and media outreach and personal consultation. These efforts require significant inputs of faculty and staff expertise, time, communication, technology and funding.
For owners of small acreages to maintain or increase the health of their land, they must realize that they

have a stewardship responsibility. They will set goals and learn how to accomplish them while stewarding the health of their property. To do this, landowners will need to learn how to set goals, understand the limitations of their land and their own expertise, and access the technical information to accomplish goals for their properties. Extension programs can provide this information through Living on the Land or similar programs and by individual consultation. These programs require organization, speakers, resource materials, marketing and funding. Consultations require time, expertise and written and electronic resources provided by Extension faculty and staff.

2. Ultimate goal(s) of this Program

Ultimate goals of the Small Acreages and Community Food Systems program are 1) to support the start-up, development and success of small-scale agricultural businesses, 2) empower landowners and on small acreages to protect and preserve their natural resources; and 3) contribute to the strength and resiliency of local food systems in Idaho's communities.
The benefits of thriving small scale agriculture and vibrant local food systems are numerous. Small business entrepreneurial opportunities, income production, healthier residents, and increased individual and community food security are just a few. Rural and urban farms as well as school, home and community gardens provide access to diversified sources of food for consumers and to communities, neighborhoods or individuals with limited access to fresh, healthful and affordable food.
Work in the urban or small farm community food sector is not at odds with regional or even global agricultural systems, in fact, each facet can work together in mutually synergistic ways. The goal is not to diminish or eliminate the need for large scale commodity farms or food processing. Instead, a thriving local food system complements a healthy global food system by increasing agricultural literacy, enhancing food security, and creating localized economic resiliency. In Idaho, the potential for this synergy is strengthened by the convergence of our agricultural history, land and water resources, University of Idaho Extension presence, the collaboration among agencies and organizations such as the Idaho State Department of Agriculture, Natural Resources Conservation Service, Idaho Farmers' Market Association and of course, consumer demand and engagement.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	2.4	0.0	1.5	0.0
2018	2.4	0.0	1.5	0.0
2019	2.4	0.0	1.5	0.0
2020	2.4	0.0	1.5	0.0
2021	2.4	0.0	1.5	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

1. Community Food Systems
A local or community food system is a collaborative network integrating food production, processing, distribution, consumption and waste management in order to enhance the environmental, economic and

social health of a particular place. To support the growth and success of food systems initiatives in their communities, Extension faculty will work with individuals, groups and organizations to lead, facilitate and mentor stakeholder-driven projects across Idaho. Projects may include food assessments and research, hunger relief efforts, development of farmers' markets, food hubs, small scale processing facilities, feasibility studies, creation of grower organizations, or even community and school garden activities.

2. Land Stewardship for Small Acreages

Agricultural land in many parts of Idaho is being converted to urban/suburban use at rapid rates with development parcels of ½ to 40 acres becoming commonplace. Landowners on these acreages, many of whom are new to Idaho, are actively seeking information and education on basic land management related to soil, water, livestock, weeds and more. This program includes in-depth courses, workshops, tours, and consultations that empower small acreage landowners to solve their issues. Documented evaluation results indicate landowners in these extension programs gain knowledge, implement best management practices, become more effective land stewards, and successfully manage their natural resources.

3. Small Farms

Forty-eight percent of Idaho's farms and ranches are smaller than 50 acres and another 20% are between 50 and 179 acres (USDA, 2012). Sixty-six percent of Idaho farmers have annual gross farm sales less than $25,000. The number of Idaho farms who report direct-to-consumer sales increased from 2,076 in 2007 to 2,420 in 2012 (USDA, 2012). Women operators make up a large proportion of our target audience--in Idaho, women are principal operators of 1,789 of the farms smaller than 50 acres and 652 of the farms between 50 to 179 acres (USDA, 2012). Both new and experienced small scale producers are exploring options for starting rural farm businesses to meet the increased demand for locally produced food and fiber products. Programming in this area provides research, education, outreach and expertise to facilitate producer success in specialty crop, livestock, organic, value added, agri-tourism or other farm enterprises on small acreages. Participants in this program gain knowledge in production, planning, risk management and more; they also adopt sustainable production practices, stabilize and expand personal and community income, and achieve success in maintaining successful small farm businesses.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● One-on-One Intervention ● Demonstrations ● Other 1 (Field days, farm tours) ● Other 2 (Conferences, consultations)	● Newsletters ● TV Media Programs ● Web sites other than eXtension ● Other 1 (publications and press releases) ● Other 2 (posters and brochures)

3. Description of targeted audience

Target Audiences

Target audiences for our programs, education and outreach include:

- Established and prospective small acreage specialty crop producers, processors and marketers
- Small acreage landowners
- Individuals and groups seeking to create, support or enhance food systems initiatives in their communities

Underserved Audiences

As Idaho becomes more ethnically, culturally, and economically diverse, opportunities increase to be conscious of these changes and make every effort to engage new Americans, refugees, Latinos, women, and limited resource farmers and landowners in our programs.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Small Farms / Marketing Conferences
- Beginning Small Farming & Ranching Course
- Small Acreage Business Planning / Entrepreneurship Courses
- Land Stewardship courses
- Tours, Demonstrations and Field Days
- Workshops and Short Courses
- Farmers Market Workshops/Trainings with ISDA
- Short Topic Webinar

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	O: Producers and landowners increase their knowledge about natural resource management, sustainable farm production, marketing and/or business management principles and practices through University of Idaho Extension programming. Indicator: Number of participants completing workshops, farm tours, short courses or in-depth courses such as Living on the Land, Stewardship of Small Acreages, Sustainable Small Acreage Farming or Agricultural Entrepreneurship.
2	O: Producers and landowners adopt recommended land management and production practices as a direct result of participation in University of Idaho Extension programming. Indicator: Number of documented best management practices adopted by landowners and producers after participating in educational programming or receiving instructional resources.
3	O: Producers and Small Acreage Landowners who have participated in Extension programs serve as motivating community leaders and models for sustainable practices and small farm enterprise success. Indicator: Number of past program participants who volunteer to teach classes or workshops, host tours of their properties, or act as formal and informal mentors to new program participants.
4	O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.
5	O: More privately owned land in Idaho is being managed to reduce negative environmental impacts and conserve natural resources. Indicator: Number of acres managed by participants in Extension small acreage programming.
6	O: Small acreage producers start or maintain a sustainable business enterprises that contribute to local food systems as a result of participating in University of Idaho Extension programming. Indicator: Number of course graduates and program participants actively marketing their farm products at farmers markets, through CSAs or other direct or semi-direct marketing channels.
7	O: Extension faculty work to support, facilitate and mentor community food systems organizations and initiatives across Idaho. Indicator: Number of food systems related groups initiating and collaborating on projects serving their communities.

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 212 - Diseases and Nematodes Affecting Plants
- 102 - Soil, Plant, Water, Nutrient Relationships
- 205 - Plant Management Systems
- 111 - Conservation and Efficient Use of Water
- 604 - Marketing and Distribution Practices

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 102 - Soil, Plant, Water, Nutrient Relationships
- 202 - Plant Genetic Resources
- 111 - Conservation and Efficient Use of Water
- 212 - Diseases and Nematodes Affecting Plants

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 102 - Soil, Plant, Water, Nutrient Relationships
- 212 - Diseases and Nematodes Affecting Plants
- 202 - Plant Genetic Resources

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

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. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 102 - Soil, Plant, Water, Nutrient Relationships
- 212 - Diseases and Nematodes Affecting Plants
- 111 - Conservation and Efficient Use of Water

4. Associated Institute Type(s)

- 1862 Research

Outcome # 5

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 212 - Diseases and Nematodes Affecting Plants
- 205 - Plant Management Systems
- 111 - Conservation and Efficient Use of Water
- 102 - Soil, Plant, Water, Nutrient Relationships
- 202 - Plant Genetic Resources

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 604 - Marketing and Distribution Practices
- 602 - Business Management, Finance, and Taxation

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 7

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 102 - Soil, Plant, Water, Nutrient Relationships
- 604 - Marketing and Distribution Practices

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Changing public priorities will influence our programs either positively or negatively. For example in the event of a food safety crisis in the national food supply, priority for the support of small farm and local food supplies will increase.
Public Policy and Government Regulations change often and may impact our target audiences. Examples would include zoning decisions that affect small farm businesses and legislation, such the US Food Safety and Modernization Act governing food production and handling practices on farms.
Economic conditions influence everything we do in extension but in particular with small farm food supply and niche marketing. If people don't have the level of disposable income that we have now the interest in high quality food at a slightly higher price may decrease.
Population changes such as increased growth in Idaho's urban areas will provide a never ending demand for natural resource protection of small acreage parcels of land.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Participation and attendance numbers for all project activities will be recorded and reported. Baseline measurements will be established through brief surveys conducted before each activity throughout the project period to assess participants' needs, knowledge level, and characteristics before participating in the project.

Participants will complete brief post-activity surveys to evaluate learning as well as the content and quality of the activity (e.g., course, webinar, field tour).
Course evaluations will include short post-course surveys to evaluate content and delivery; mid-course evaluations will be used to modify and immediately improve the course offerings. Mentoring relationships will also include mid-experience evaluation. End-of-course evaluations will measure participants' knowledge and anticipated behavior changes as a result of participating in the activity. Participants in long term activities will be surveyed up to 10 months after the activity has been completed to report their implementation of specific changes they made as a result of participating in the project.

V(A). Planned Program (Summary)

Program # 14

1. Name of the Planned Program

Global Food Security and Hunger: Sugar Beets & Minor Crops

2. Brief summary about Planned Program

This planning document covers University of Idaho Research and Extension faculty working on sugarbeets and a number of minor crops including onions, alfalfa seed, hops, and other commercial crops. The subjects of the research and extension enterprises include soil nutrient management and other plant production practices, and a variety of pest management issues associated with sugarbeets and minor crops.

The specific priority issues we are addressing are:

- Economic viability - e.g. reduction in fertilizer, pesticide and labor inputs and pollinator management costs
- Environmental Sustainability - maximizing water use efficiency by using drip irrigation, maximizing nitrogen use efficiency by making more intensive use of soil and tissue testing, pesticide and fertilizer application through drip irrigation systems, evaluation of alternative pesticides and biologically based pest management options for key pests
- Biological Applicability - addressing agricultural production issues with a greater understanding of the fundamental interactions between management inputs, pest impacts, and plant responses
- Increased clientele access to research/extension information relating to crop production and pest management issues addressed.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Idaho ranks 2nd in the nation in sugar beet production and is a significant producer of dozens of other commercial crops. For sugar beets, many production problems result from short rotations and other cropping system factors that affect pest management, soil health and soil tilth. Increasing rates and frequencies of manure and compost applications to croplands present potential problems. Most growers excessively irrigate sugar beets. Periodically growers face inadequate water supplies. Over-irrigation leads to a) increased disease, b) excessive nutrient leaching and erosion, and c) lower yields. Growers are not taking advantage of current technology for soil moisture monitoring and irrigation scheduling.

The topic team addresses production and pest management issues needed to improve the economic and environmental sustainability of those minor crops that are already being commercially grown in Idaho, even if by only a few growers or on small acreages.

Idaho growers currently produce a variety of commercial crops including vegetable, fruit, seed and other crops that are located in specific areas of the state or on small acreages across a wider geographic region. These crops are sometimes called "minor crops" because they are produced on 300,000 acres or less on a national basis compared to the millions of acres dedicated to major crops such as corn, soybeans and wheat. Minor crops have established markets and political influence via grower associations and commodity commissions. They are not considered alternative crops because they have established

markets, a tradition of production in Idaho, and are often represented by established growers. Most of these crops produced in Idaho lack, individually, the critical mass of personnel, resources and political influence needed to generate and maintain research and extension programs aimed at improving their economic and biological sustainability.

A major issue in minor crop production is the efficacy and availability of pesticides. EPA and USDA have been working closely with minor crop growers and commodity groups to preserve critical uses of certain older pesticides while working with IR-4 to rapidly make available new reduced risk pesticides. While the impact of the 1996 Food Quality Protection Act (FQPA) is still unknown, some pesticides have been shown to have high levels of exposure to farm workers and applicators resulting in label restrictions for minor crops. Efficacy and phytotoxicity information is needed to augment information produced by IR-4 magnitude of residue studies. Mechanisms that enhance communication and collaboration among land grant universities, growers and organizations involved in minor crop production are needed to identify, prioritize and advance the critical research and extension needs of minor crop producers.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

The crops being grown with our projects will still be grown by producers throughout the planning period.

- Acreages of sugar beets and minor crops will remain relatively stable over the next several years.
- Adoption of Roundup Ready sugar beets by growers will be very high.
- Pest management strategies will continue to evolve, as will pest management challenges.
- The adoption of Best Management Practices (BMP's) will result in reduced production costs, improved profit margin, increased sugar beet and minor crop acreage, and reduction in consolidation of farms.

2. Ultimate goal(s) of this Program

The adoption of best management practices by growers will maximize cost-effectiveness while minimizing environmental risks (e.g., to water quality through reduction of pesticide levels in ground and surface water bodies and fertilizer runoff) as a result of increased IPM practice adoption, improved profitability, improved water use efficiency and increased efficacy of pesticides while reducing pesticide resistance potential.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	3.0	0.0	11.0	0.0
2018	3.0	0.0	11.0	0.0
2019	3.0	0.0	11.0	0.0
2020	3.0	0.0	11.0	0.0
2021	3.0	0.0	11.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

1. Collaboration and coordination of pest management programs, including pesticide safety education in the Pacific Northwest and West, the Idaho Pest Management Center (IPMC), and the Western Integrated Pest Management Center.
2. Cost of production estimates for sugar beets based on current management practices will be calculated for the three primary production regions of southern Idaho on a biennial basis, which will serve as a baseline for comparing the economic costs and benefits of alternative production practices and crop production systems.
3. Ecological studies of plant pests and beneficials, and effects of cultural practices on the pests as well as the yield of sugar beet and other minor crops. Taking into account climate change and sustainable production practices and their effects on crop pests and crop performance.
4. Identification and communication of pests and pest outbreaks through the Treasure Valley Pest Alert Network, a collaborative effort with Oregon State University, commodity commissions, growers and field representatives to rapidly communicate about pest outbreaks; and through the Western Plant Diagnostic Network state-wide, web-based plant diagnostic system for rapid identification of insect, disease and weed samples as a part of the national preparedness against bioterrorism and to ensure crop biosecurity.
5. Irrigation and nutrient management to improve water and nutrient use efficiency, taking in consideration effects on plant pests and weeds, crop performance and value.
6. Pest management programs for insects, pathogens and weeds in sugar beet and other minor crops, including efficacy assessment, risk assessment and magnitude of residues, as part of the IR-4 (Interregional Research Project #4) which works continually with growers, scientists and commodity organizations to identify minor crop pest control needs.
7. Technology transfer providing a repository of research information through the Idaho Alfalfa Seed Industry Website.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods

● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations	● Newsletters ● Web sites other than eXtension

3. Description of targeted 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).

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Extension workshops, schools and conferences, planned and organized
- Field tours, demonstration projects, planned and organized
- Applied and basic laboratory and field research experiments
- Professional invited presentations.
- Presentations at Extension Workshops, schools and conferences and non-extension venues
- Sugarbeet Costs and Returns Estimates

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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

Outcome # 1

1. Outcome Target

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. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 216 - Integrated Pest Management Systems
- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Diseases and Nematodes Affecting Plants
- 111 - Conservation and Efficient Use of Water
- 102 - Soil, Plant, Water, Nutrient Relationships
- 213 - Weeds Affecting Plants

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 402 - Engineering Systems and Equipment
- 111 - Conservation and Efficient Use of Water

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 213 - Weeds Affecting Plants
- 216 - Integrated Pest Management Systems
- 215 - Biological Control of Pests Affecting Plants
- 111 - Conservation and Efficient Use of Water
- 402 - Engineering Systems and Equipment
- 205 - Plant Management Systems
- 212 - Diseases and Nematodes Affecting Plants
- 202 - Plant Genetic Resources
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 102 - Soil, Plant, Water, Nutrient Relationships

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Public Policy changes
- Government Regulations
- Other (climate)

Description

The plan of work we are submitting is based on conditions in 2015. Team members are unable to predict conditions into the future. For example, we do not know how the rapidly changing demographics in Idaho will impact the environmental, economic, and social aspects of the Sustainable Production and Pest Management Systems addressed by this plan of work. We do not know when State/Congressional priorities will change and therefore affect the funding levels needed to carry out these programs, or if continuing climate changes will cause changes in commodities that can be profitably produced.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

The effectiveness of the Sugar beets and minor crops topic team will be evaluated with the use of several different evaluation instruments.

- Pre- and Post-tests will be used to evaluate program impact
- Survey instruments (both electronic and paper format) will be used to evaluate impact on program participants
- Number of visits by participants to our program websites will be tracked over time
- Number of growers adopting practices taught in programs, and acres represented by those growers will be tracked over time

V(A). Planned Program (Summary)

Program # 15

1. Name of the Planned Program

Childhood Obesity: 4-H Youth Development

2. Brief summary about Planned Program

4-H Youth Development is focused on strengthening youth and families across Idaho. 4-H will continue to create positive learning environments based on the 4-H Essential Elements of Belonging, Independence, Generosity and Mastery. The 4-H Youth Development Team, composed of Educators, staff and volunteers, will work on the following topics:

- 4-H Science- Use research based methods, curricula and materials to increase the knowledge and skills of youth in science, engineering and technology.
- Healthy Living - Educate youth about nutrition, health, physical fitness and health risks plus enhance their decision-making skills in selecting choices that will lead to healthy lifestyles.
- Youth and Adult Leadership and Volunteer Development - Recruit, Train and Retain adult and youth volunteers to enhance their leadership skills and provide opportunities for these volunteers to use the skills learned.
- Youth Leadership and Citizenship - Provide real-world opportunities for youth to develop leadership skills and to engage in their communities.
- Reaching Underserved Audiences - Expand partnerships and increase efforts to provide programs for underserved audiences.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
724	Healthy Lifestyle	20%		10%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	20%		10%	
806	Youth Development	60%		80%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Extension professionals design programs that encompass the elements of positive youth development as identified by research. The programs increase life skills and subject matter knowledge through hands-on learning. Priority is given to 4-H Science, Healthy Living and Leadership/Volunteer Development (Citizenship) programs as they fit within federal mandates.

4-H Science

- Programming in 4-H Science is a 4-H National mission mandate.
- National Assessment of Educational Progress indicates that only 31% of 4th graders and 39% of 8th graders are proficient in science and technology.
- Low income youth do not have ready access to the technology needed to increase their knowledge and skills; therefore they are more likely to fall even further behind.
- The U.S. Dept. of Labor predicts that the 10 fastest growing jobs in the next ten years are those in science, engineering, and technology-intensive fields.
- In Idaho, to achieve yearly progress requirements many schools have reduced science instruction in order to focus more on math and reading.
- 48% of 4-H youth are involved in animal science projects
- Fewer youth live on a working farm and have no background in animal science production. Youth need an understanding of good animal husbandry practices and animal quality assurance practices.

Healthy Living

- Healthy living, a 4-H National mission mandate, engages youth and families through access and opportunities to achieve optimal physical and social-emotional well-being.
- Reducing childhood obesity is a USDA-NIFA priority.
- Physical well-being includes such things as nutrition, fitness, safety, avoidance of risky behavior, and adequate sleep.
- The Nutrition Standards for Idaho School Meals was only implemented in August 2009. (www.sde.idaho.gov/site/cnp/nutritionStandards/)
- Local School Wellness Policies were required in 2006, though many schools still struggle with implementation. (www.sde.idaho.gov/site/cnp/wellness/)
- 28% of children (ages10-17) in Idaho are overweight or obese and national average is 32%.
- 55% of Idaho high school students are not meeting recommended physical activity level.
- The statewide framework for nutrition and physical activity, Healthy Eating Active Living (HEAL) Idaho 2011-2013, has identified the priority areas of infrastructure and capacity building, nutrition, and physical

activity across the life span.

Volunteer and Adult Leadership Development

- Volunteer development and youth/adult leadership are critical elements of the 4-H program.
- Idaho does not have enough volunteers to meet 4-H member and program demands.
- Trained volunteers enhance programming efforts.
- Educating volunteers enhances their experience and increases retention.

Youth Leadership and Citizenship

- Youth want to be involved in making decisions that affect their lives.
- Youth-adult partnership programming addresses the 4-H National Citizenship mission mandate.

Reaching Underserved Audiences

- 42% of Idaho's youth live in low-income households and 16% of Idaho's youth live in poverty.
- 31% of Hispanics in Idaho are 4-H age (5-19 years).
- 11% of 4-H youth are Hispanic.
- 30% of Hispanics live below the poverty line.
- Native American youth population is 1.4%; 85% live in poverty.
- Deployment of military parents in Idaho has increased.

2. Scope of the Program

- In-State Extension
- Multistate Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Topic Team members will deliver trainings, workshops, curricula ,and learning activities in the four key areas.They will present posters and exhibits, write publications and media materials to actively promote4-H Youth Development. Program impacts will be reported through appropriate Extension publications and web sites.

Desired Outcomes: 4-H Science-including Animal Science

- Youth will express interest and be engaged in Science related activities.
- Youth will express positive attitudes about Science.
- Youth will demonstrate a capacity for science process skills.

Desired Outcome: Healthy Living

- Increased knowledge and practice of healthy food and beverage choices.
- Improvement of physical activity choices

Desired Outcome: Volunteer and Adult Leadership and Development

- Increase the total number of volunteers by 2% in each county, per year to reflect the needs of the 4-H POW priorities.
- Increase adult volunteer participation in relevant positive youth development, leadership, and content related training.

Desired Outcome: Youth Leadership and Citizenship

- Increase youth participation in leadership training.

- Increase the percentage of youth who make positive choices

Desired Outcome: Reaching Underserved Audiences

Continue outreach to underserved youth and adults in the University of Idaho 4-H Youth Development programs. In order to deliver the outcomes the Topic Team will need to invest the following resources:

- Extension faculty and staff time
- Volunteer time
- Funds from grants, program participants, and federal, state and county entities
- Educational materials
- Evaluation of life skills, content skills, and participant satisfaction

2. Ultimate goal(s) of this Program

4-H will pursue the following goals:

- Design 4-H programs that encompass the framework and elements of positive youth development as identified by research.
- Youth participating in science, engineering and technology project, activities and events will expand their science processing and technology skills.
- Youth will make healthy choices in eating and physical fitness because of their participation in healthy living projects, activities and events.
- A larger number of youth and adults will develop/enrich leadership and citizenship skills through focused recruiting, retention, and training programs at teh local, district and state level.
- Continue to reach underserved and new audiences through expanded partnerships, increased programming efforts and more effective marketing of the program.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	19.3	0.0	0.0	0.0
2018	19.3	0.0	0.0	0.0
2019	19.3	0.0	0.0	0.0
2020	19.3	0.0	0.0	0.0
2021	19.3	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Projects

1. 1. 4-H Science (including Animal Science)

There is great concern by educators and decision makers regarding the number of youth interested in

sciences. Low standardized test scores for youth indicate they are not learning the skills they will need in the workplace. Youth and families at or below the poverty level have limited access to computers and other technology outside the classroom.
4-H Youth Development programs and curriculum are research based. Many of the activities and lessons in these projects have a science and research component. Volunteer adults are trained to assist youth in learning the skills and the scientific basis of the projects. Youth can learn and understand scientific principles in a wide variety of ways outside the classroom. 4-H Youth curriculum that contains experiments and research projects are an excellent way to teach youth science beyond the classroom. The National Science Foundation released a report indicating the lack of engineering education in U.S. public schools 4-H is the leading youth development program providing authentic engineering experiences for youth.
Animal science projects comprise 48% of the total 4-H projects taken in Idaho. Programming will focus on science based production and animal husbandry practices, quality assurance and science processing.
Faculty and staff are using grants, community collaboration, trained volunteers, research-based curricula and hands-on learning activities to meet the goals of increasing interest and engagement in science, positive attitudes, and aspirations towards science, developing science skills and abilities, and applied learning to making contributions to their community through science. They are sharing ideas and successes through workshops, publications, poster sessions and exhibits, journal articles and impact statements.

2. 2. Healthy Living

Being healthy is a priority of all individuals and families. With education and knowledge people will be able to make better decisions that can affect their health for their lifetime.
The Healthy living program targets these issues by teaching participants how to: prepare and cook nutritious meals, increase their fruit and vegetables, whole grains, and low-fat dairy consumption and decrease fat, sugar, salt and calorie intake. The specific focus will be on 'think your drink' to reduce sugar and calorie intake and redirect participants to increase the consumption of fruits, vegetables, whole grains and low-fat dairy foods.
Faculty and staff are using grants, community collaboration, trained volunteers, research-based curricula, and hands-on learning activities to meet the goals of increasing knowledge and practice of healthy living skills. They are sharing ideas and successes through workshops, publications, poster sessions and exhibits, journal articles and impact statements.

3. 3.1 Adult Leadership and Volunteer Development

High quality leadership and volunteer development are fundamental to delivering quality 4-H Youth Development programs In order to ensure that we can meet our ever increasing need for enthusiastic, well prepared volunteers, we must continuously concentrate our recruiting efforts on finding individuals who will be committed to helping our program grow successfully We must also focus efforts on retaining those volunteers who are currently committed to improve and enrich our program These efforts will include a variety of ongoing, effective training opportunities as well as appropriate, relevant, and helpful support It is essential that our volunteers have experiences that are valuable, meaningful, and enjoyable.
Faculty and staff are using grants, community collaboration, trained volunteers, research-based curricula and hands-on learning to meet the goal of engaged volunteers. They are sharing ideas and successes through workshops, publications, poster sessions and exhibits, journal articles and impact statements.

4. 3.2 Youth Leadership and Citizenship

The eight essential elements of 4-H Youth Development allow youth to participate experientially in activities and events, feel nurtured in a safe environment, master new skills and abilities and be empowered to contribute to their environment and communities in a positive way.
Considering the value of teen programming, the importance of youth/adult partnerships, National 4-H Mission Mandates, and other youth development principles, the following purpose statement was developed in 2015: The purpose of the Idaho 4-H Teen Program is to inspire, educate, and support teens across Idaho in learning leadership, citizenship, and life skills. The 2016 Idaho 4-H Teen Officers developed a purpose statement from their point of view: The purpose of the Idaho 4-H Teen Program is to establish meaningful relationships while realizing personal potential. The statements mirror the importance of quality teen programs and lead to the development of successful youth/adult partnerships throughout all

Idaho 4-H programs
Leadership and citizenship are an integral part of 4-H Youth Development. By providing educational opportunities for youth to learn leadership skills and participate in community service learning they can put into practice what they have learned to become more involved in their communities.

5. 4. Reaching Underserved Audiences

Faculty, staff and volunteers use focused delivery methods to reach Idaho's underserved youth. Underserved youth are those who currently, or in the recent past, were not served by 4-H Youth Development. Underserved youth may include specific racial/ethnic groups, youth from military families, special needs, or youth from low-income families (as defined by those eligible for reduced price or free school meals), urban or extremely rural families, non-traditional families, including those impacted by the justice system. Proven delivery methods for reaching underserved youth include afterschool, day and overnight camps, and special interest programs.
Currently, University of Idaho 4-H Youth Development is designing unique programs for Latino, Native American, low-income and military youth and families. Faculty and staff are using grants, community collaboration, trained volunteers, research-based curricula, and hands-on learning to provide outreach to these youth and families. They are sharing ideas and successes through workshops, publications, poster sessions and exhibits, journal articles and impact statements.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (4-H clubs, camps, afterschool pr)	● Public Service Announcement ● Newsletters ● TV Media Programs ● Web sites other than eXtension

3. Description of targeted audience

- Idaho youth, ages 5-18
- Idaho young adult 4-H alumni: 19-24 year olds
- 4-H members
- 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 development staff
- Hispanic youth and adult volunteers
- American Indian youth and adult volunteers
- Children and families with military ties
- Incarcerated youth and adults

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of youth in educational classes, workshops, trainings, seminars taught (individual teaching contacts)
- Number of volunteers in educational classes, workshops, trainings, seminars taught. (individual teaching contacts)
- Number of opportunities to promote 4-H Youth Development (Not the circulation; Enter the number of publications [not Ext. or Research], newsletters, columns, radio PSA's, radio/TV appearances, etc. written or developed.)
- Number of actual educational classes, workshops, trainings, seminars taught
- Number of 4-H clubs or groups. Each county enters their county numbers from the ES-237
- Number of youth attending state 4-H events (lead contact for event enters data.)
- Number of volunteers attending county, multi-county, district, state, regional, and national events (Lead contact for event enters number attending)
- Number of hits on the web site and social media sites each year (one report per county)

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 724 - Healthy Lifestyle
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 724 - Healthy Lifestyle
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 7

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 8

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 9

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development
- 724 - Healthy Lifestyle
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 10

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 11

1. Outcome Target

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

and/or activity.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

The 4-H youth development topic team receives generous support from public and private sources. Economic factors could affect funding streams at any time, forcing local 4-H professionals to alter programming to compensate. In addition, changing demographics will continue to alter 4-H programming on the local level. Idaho continues to experience urban growth in several population areas, as well as an influx of Latino and other minority groups.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Many of these outcomes will be measured using the 4-H Common Measures indicators, which are a national database of indicators to measure learning. They will also be collected using the 4-H ES-237 data.