2010 Washington State University Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

Washington State University Extension is the statewide and university wide outreach and engagement enterprise of WSU. Through our network of offices in 39 of 39 counties, 4 research and extension centers and units, four university campuses, and other facilities, we connect the university to virtually every community in the state. Since 2007, we implemented a new Federal Plan of Work. Concurrently, we began implementation of a new strategic plan for WSU Extension (the WSU Extension Strategic Framework http://ext.wsu.edu/framework/Framework.pdf).These documents are closely aligned. This allows us to effectively focus the organization on issues that are critical to the state while addressing areas of national concern. Within these structures, we will report on the following five programmatic foci:

1. building capacity of Washington communities to create a desired future;
2. eliminating barriers to social, economic and educational success among youth and families;
3. enhancing economic opportunities for agricultural producers while protecting Washington's resources;
4. enhancing stewardship of natural resources and the environment; and
5. improving the health and wellness status of Washington residents

In addition to these focused programs, our Strategic Framework identifies areas in which we desire to enhance our capacity. These strategic initiatives are designed to enhance the effectiveness of the entire organization and will also affect our ability to address the programmatic foci listed above. These include:

1. improving our ability to reach out to the state's urban populations;
2. strengthening WSU Extension's role as an integral part of the University;
3. increasing the diversity of our faculty, staff, volunteer base, and those we serve;
4. creating a premier web presence for the purpose of delivering information and interactive learning opportunities; and
5. expanding our strategic international engagement.

This document reflects our on-going commitment to expanding the economy, improving the quality of life and enhancing the environment of Washington State. Both the 2010 Federal Plan of Work and our Strategic Framework provide focused approaches to measuring our progress toward these overall goals by defining expected outcomes related to change in knowledge, change in action or behavior, and change in condition.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	150.0	0.0	0.0	0.0
Actual	170.0	0.0	0.0	0.0

II. Merit Review Process

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

- Internal University Panel
- External University Panel
- Other (Ag Research Center combined POW review)

2. Brief Explanation

In recent years (2007-2010), our programs have been evaluated by three university-wide processes.

• WSU Extension was an active participant in a university review and accreditation process which took place in 2007 and 2008 with some processes still continuing.

• During fall 2010, WSU undertook a university-wide prioritization process to collect "Big Ideas" for showcase programs and ideas for reorganization. Both budget reductions and program quality improvement were sought. WSU Extension programs were evaluated by a core committee of faculty and administrators.

• In 2010, state budgets were stable in anticipation of cuts in the biennial budget 2011-2013 to be announced in July-Aug 2011. County budgets are somewhat stable thanks to a strong relationship with the WA State Association of Counties (WSAC) which WSU Extension has been an Affiliate since 2004. A retirement incentive program was initiated with commitment to retirement by Dec. 31, 2010. WSU Extension had several key administrators chose retirement and we have 4 key positions vacant: Assistant Director and 3 of 3 District or regional supervisors. WSU Extension continues to engage WSAC and county advisory boards in prioritization processes. A joint WSAC and WSU Task Force was launched in January 2011 and online surveys developed. The results of those additional efforts and reorganization and integration with the Ag Research Center and the College of Agricultural, Human, and Natural Resource Sciences will be reported in next year's Report of Accomplishments. WSU continues to use regional colleagues in review of our Plan of Work and Annual Reports of Accomplishments. We provide copies of its Plan of Work and Reports of Accomplishments to senior leadership of the University (Provost and President) and to key stakeholder groups.

III. Stakeholder Input

1. Actions taken to seek stakeholder input that encouraged their participation

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey of the general public
- Survey specifically with non-traditional groups
- Survey specifically with non-traditional individuals
- Survey of selected individuals from the general public

- Other (Meet with key leaders at local and state level)

Brief explanation.

We leverage public media to reach out to a broad array of stakeholders. This includes Spanish language radio (especially in Latino communities), local access television, newspapers (both English and other languages), electronic (web site, email lists, and targeted emails), newsletters, posted announcements in high volume areas (often in multiple languages), group meetings, and targeted direct mail. As part of this process, we develop materials that are both culturally sensitive and are designed to engage a variety of stakeholder groups and populations. Multiple language materials (7 languages) are common for the nutrition education program. Individuals are frequently identified through our various formal and informal networks who are candidates for positions on our various advisory structures. These individuals typically represent specific knowledge about target audience needs or about specific subject matter that we believe will help advance program design, delivery or impacts. These individuals are contacted directly by the appropriate party (County Director, District Director, Program Director, Associate Dean, Dean etc.) to invite their participation.

2(A). A brief statement of the process that was used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

1. Method to identify individuals and groups

- Use Advisory Committees
- Use Internal Focus Groups
- Use External Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Surveys
- Other (Meetings with community and state leadership)

Brief explanation.

WSU Extension is also engaged with numerous boards, organizations, agencies, and nonprofit organizations. Through this engagement we are able to identify individuals with broad perspectives to advise us on how to remain dynamic and responsive. Our county based programs are closely aligned with the needs of county government and their constituencies, and we confer with local officials frequently to understand needs and to effectively define WSU Extension's role within key local partnerships. WSU Extension serves as an affiliate member of the Washington Association of Counties. This allows us to learn about broad based issues and to participate in finding viable science-based solutions. Stakeholder input is a sequential process. We seek to identify emerging needs within communities through searches of the literature and review of demographic (census) data followed by in depth discussions with local decision makers and the Governor. We also compile data from various sources and create profiles for each county. These data are then distributed among the County Directors to ensure that they are fully aware of the diversity, economic bases, and critical issues in their counties.
Once groups are broadly defined, care is taken to understand most effective mechanisms of engagement. Language or culture is factored into the program design. Culture and language issues also often determine how we staff for future programming. This has led us to employ individuals from Russian, Hmong, Native American, Latino, African American, and many other cultural or ethnic groups statewide. We leverage these employees or find individuals within specific target populations

to help us ensure that materials are culturally and linguistically correct. We also strive to understand any other issues related to learning styles, social traditions, etc.

2(B). A brief statement of the process that was used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting with the general public (open meeting advertised to all)
- Survey of the general public
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional groups
- Meeting specifically with non-traditional individuals
- Survey specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public
- Survey of selected individuals from the general public
- Other (Meet with local/statewide leadership)

Brief explanation.

Stakeholder input is gathered through numerous formal and informal processes. Our faculty, staff, and administrators are members of many key organizations at local, statewide and national levels. Additionally, Extension and college membership is legislatively required on the Board of Directors for the Washington State Department of Natural Resources and the Washington State. Formal processes include the many local and statewide advisory committees that are created and maintained specifically for the purpose of garnering stakeholder input. The formal advisory structures include the statewide "Friends of Extension", the College of Agricultural, Human and Natural Resources Dean's "Kitchen Cabinet," the Center for Sustaining Agriculture and Natural Resources advisory committee, statewide and local Master Gardener Leadership Council, State 4-H Advisory Council and local leader organizations, county advisory committees, and advisory committees for research and extension centers and units. In addition, each WSU Extension faculty and administrator is encouraged to develop and maintain informal networks that permit them to garner input from key officials, industry representatives, and advocacy groups. Surveys are frequently used to garner input about the effectiveness of individual programs; and focus groups are also used to test new approaches, web site designs and materials. Most hiring processes also include extensive stakeholder input. Generally this is accomplished by asking stakeholders' advice on position descriptions and by asking them to serve on search and screening committees.

3. A statement of how the input will be considered

- In the Budget Process
- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Staff Hiring Process

- In the Action Plans
- To Set Priorities
- Other (In strategic planning processes)

Brief explanation.

Stakeholder input has been valuable to the development of long-range plans including staffing, facilities investments, and in developing funding proposals. With the Washington State Association of Counties (WSAC) we are using information gained from an online survey to restructure and refine the delivery of program and the geographic distribution of faculty and staff. Input from stakeholders is critical in the design and delivery of effective programming. Virtually every program we deliver involves engagement with both program participants and advisors. This helps ensure that we reach the appropriate audiences; that these individuals are able to achieve their goals; and that we are able to achieve the desired outcomes from the program.

Brief Explanation of what you learned from your Stakeholders

Stakeholder input is routinely used in numerous decision processes. In 201-2011, budget challenges confronted WSU Extension at both the state and county levels. Stakeholders helped us evaluate the feasibility of various reduction scenarios and proved extremely valuable in understanding the impacts of our decision. Changes in federal law are changing programming opportunities and strategies for delivery. For example, with the WA Department of Social and Health Services and the WA Dept. of Health we are re-evaluating program delivery in the new grant environment as a result of Children's Nutrition Reauthorization. A ad hoc Task Force with members of those state departments and our staff are helping us ensure that these grant dollars were used for the highest purpose possible and yielded the greatest impacts.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
4196051	0	0	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	3476385	0	0	0
Actual Matching	3476385	0	0	0
Actual All Other	35853390	0	0	0
Total Actual Expended	42806160	0	0	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	1404935	0	0	0

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Enhance Economic Opportunities for Agricultural Enterprises while Protecting Washington's
2	Create and Sustain Vibrant Communities and Urban Neighborhoods
3	Improve Health and Wellness of the Residents of Washington
4	Empower Youth and Families to Achieve Social, Economic and Educational Success
5	Enhance Natural Resources and Environmental Stewardship

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Enhance Economic Opportunities for Agricultural Enterprises while Protecting Washington's Resources

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%			
112	Watershed Protection and Management	10%			
205	Plant Management Systems	25%			
213	Weeds Affecting Plants	10%			
216	Integrated Pest Management Systems	15%			
307	Animal Management Systems	15%			
601	Economics of Agricultural Production and Farm Management	15%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	50.0	0.0	0.0	0.0
Actual	74.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1508020	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1508020	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
15552332	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

WSU Extension works with the people of Washington State to address agricultural, natural resource, and environmental issues by providing information, education, technical assistance, and local development programs.Our programs are available to all without discrimination.

WSU Extension will address this goal directly through educational programs, demonstration activities, and facilitation processes.Training programs for faculty, staff, volunteers and appropriate partner organizations as well as for specific clientele groups, the general public and underserved populations will be conducted.Educational programs will address the following:

•Sustaining Economically Viable Food Production •Managing the Risk Associated with Agricultural Production •Developing Alternative Crops and Markets •Harvesting Clean Energy from Farm Fields •Supporting Viable Growth of Organic Agriculture •Protecting Crops and Animals from Pests and Diseases •Enhancing Farm Profitability through Value Added Products and Processes •Protecting and Enhancing the Agricultural Natural Resource Base

Other outreach techniques will include field demonstrations, mass media (such as web pages, video streams, newspapers and newsletters), workshops and meetings.Trained volunteers will support programming efforts.

2. Brief description of the target audience

Commercial and small-scale agricultural producers, interest groups, WSU employees, industry support and agency personnel, consumers, rural families, single parent subsistence farm families, and ethnic minorities associated with agriculture.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	50000	100000	25000	0
Actual	55743	129283	4006	2951

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

Patent Applications Submitted

Year: 2010
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	20	0	
Actual	97	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of integrated research and extension programs.

Year	Target	Actual
2010	13	15

Output #2

Output Measure

- Number of contacts with minority stakeholders within the state resulting in increased knowledge about sustainable agricultural practices.

Year	Target	Actual
2010	13000	800

Output #3

Output Measure

- Number of Extension faculty and staff creating, implementing and evaluating culturally competent programs to increase the diversity of Extension program participants and partners.

Year	Target	Actual
2010	35	33

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percentage of educational program participants that increased their knowledge about practices that can enhance profitability, competitiveness, or environmental stewardship.
2	Percentage of educational activity attendees that plan to effectively manage the risks of market price variation, adverse environmental inputs, changing government programs, and variation in public awareness about nutrition and food safety.
3	Percentage of educational activity attendees that can recognize and evaluate the economic, environmental and social opportunities of alternative plant and animal production systems including production of bio-energy, bi-product utilization, agritourism, and value-added processing.
4	Percentage of educational activity attendees that increased their knowledge of organic production practices, regulations, and marketing opportunities.
5	Percentage of educational activity attendees that increased their knowledge of effective pest management practices, conservation tillage systems, and/or riparian management methods that protect endangered species and the environment and safeguard human health.
6	Number of organic farms and ranches certified in Washington that were assisted by Extension programming or through partnerships between Extension and other agencies and organizations.
7	Estimated reduction dollars spent for chemical pesticides among farms utilizing integrated pest management strategies.
8	Number of acres on which habitat and aquaculture production was improved as a result of Extension programming.

Outcome #1

1. Outcome Measures

Percentage of educational program participants that increased their knowledge about practices that can enhance profitability, competitiveness, or environmental stewardship.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	75	81

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Profitability of farms and ranches remains an essential component of the sustainability for agricultural production in the United States. Agriculture requires relatively large capital investments and similarly high annual production expenses relative to the market value of crops and livestock produced. Numerous variables influence gross farm receipts as well as net profit in this traditionally low-margin business, but research-based Extension educational programs have proven highly effective in informing and teaching producers to maximize profitability through the adoption of a variety of practices and strategies. This outcome statement addresses assessments associated with training and education on management efficiency and the deployment of research-based production methods and strategies. The assessment of risk-management education, also important to profitability and competitiveness, will be reported under Outcome #2

What has been done
What has been done:
Programs delivered information and training across a variety of agricultural enterprises to enhance learning and motivate the application of research-based knowledge to improve farm profitability and sustainability. Major programs focused on the following production categories.
?Animal Agriculture Enterprises (beef cattle, dairy, swine, sheep, goats, and poultry)
?Dry-land Cropping Systems (cereals, oil seeds, peas, and lentils)
?Tree Fruit Orchard Management (apples, pears, and cherries)
?Small Fruit Production (raspberries, blueberries, and other soft fruits)
?Wine Grape & Juice Grape Production
?Enology & Wine Making
?Commercial Vegetable Crops and Seed Crops in Irrigated Farming Systems (potatoes, onions, carrots, seed crops, and other high value specialty crops)
?Forage Production (harvested cash crops and intensive grazing systems for improved pastures)

?Irrigation Efficiency
?Beginning Farmer and Small Farm Enterprises

Results
?91% of 400 wine and juice grape growers in Washington State increased knowledge about grapevine virus diseases and science-based knowledge on negative impacts of viruses on vine health and fruit quality.
?30 participants graduated from the WSU Viticulture Certificate Program, and applied their training in the growing wine grape industry.
?The extension bulletin on Grapevine Leafroll Disease (EB2027E) has been recognized by the National Clean Plant Network of the USDA-APHIS as a valuable resource for the Grape Clean Plant Network at the national level.
?Extension programs generated increased sales of dormant and green-potted certified disease-free vines in Washington State to $3.1 million in 2010. This represents nearly 75% increase in sale of certified planting materials over a four year period.
?Extension programs increased grower awareness and knowledge of grape diseases and contributed to planting new vineyards with virus-tested ?clean? plants, supporting industry?s goal of expanding wine grape acreage from 36,000 acres in 2010 to nearly 90,000 acres by 2020. This will triple the economic value of wine and grape industry from the current levels of about $4 billion to about $10 billion per year by 2020.
?Extension program resulted in 30,333 acres of mustard green-manure crops to be planted as a bio-fumigant to replace metam sodium fumigation in potato crops, and generated an economic savings of $685,610 to growers based on survey and assessment data gathered from farmers.
?24% of the dry bean acres in the upper Columbia Basin were direct seeded (4,080 ac), and approx. 17,500 ac of sweet corn as either direct seeded or strip-tilled during 2010 to reduce soil erosion as a result of Extension programs and field days.
?Conception rates among artificially inseminated first-calf heifers were improved by an average of 60% among 160 participants in a beef cattle reproduction program.
?A WSU-IR-4 partnership provided field and laboratory residue data necessary for US-EPA clearance of minor crop pesticide uses in EPA Region 10 (Washington, Oregon, and Idaho. Over the past 12 years, every alternative pesticide chemistry product for Washington State's 300+ specialty crops has been registered via the IR-4 program. A recent analysis completed by the Center for Economic Analysis at Michigan State University calculates that the economic impact of the WSU-IR-4 partnership was $1.6 billion in improved crop protection for the period between 1996 and 2006.
?100 dairy producers were trained in a ?Calf Housing and Environment? workshop series, with a resulting 100% intent to apply this knowledge to improve calf health and reduce morbidity and mortality.
? Pest management programs for irrigated crops in the Columbia Basin made 2750 farmer contacts with a 75% learning and 40% adoption rate assessed. These programs increased onion crop profitability by $200 per acre by not using ineffective insecticides for thrips control and eliminating an untimely insecticide application. (40% of 21,000 acres times $100 per acre= $.84 million). Increased insect monitoring in potatoes reduced one insecticide application per season per acre impacted with a impact of $1.256 million (40% of 157,000 acres times $20 per acre for insecticide= $1.256 million).

4. Associated Knowledge Areas

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

112	Watershed Protection and Management
205	Plant Management Systems
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
307	Animal Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #2

1. Outcome Measures

Percentage of educational activity attendees that plan to effectively manage the risks of market price variation, adverse environmental inputs, changing government programs, and variation in public awareness about nutrition and food safety.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	25	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Farmers and ranchers are facing an unprecedented risk environment threatening their ability to be profitable and in fact remain solvent in many cases. Risk management education has focused on Extension educational programs and products to inform and train agricultural producers with strategies that will maintain long run solvency of their businesses in the face of a dynamic and rapidly changing economic environment.

What has been done
?53 formal training programs were conducted via local Extension offices and through the WSU Western Center for Risk Management Education (WCRME)
? A variety of local and regional publications and newsletters, as well as websites and computer-based decision aids were deployed in this effort.
?Women in Agriculture Training Series

Results
?90% of livestock producers receiving training and information on risk management increased knowledge, and 70% reported application of at least one practice.

?1120 program participants across a variety of agricultural audiences were trained in risk management strategies with 84% significantly increasing their knowledge and ability to utilize risk management practices in their operations.
?250 livestock producers were trained in residue avoidance practices in 2010, with 100% of participants gaining new knowledge.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
216	Integrated Pest Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #3

1. Outcome Measures

Percentage of educational activity attendees that can recognize and evaluate the economic, environmental and social opportunities of alternative plant and animal production systems including production of bio-energy, bi-product utilization, agritourism, and value-added processing.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	65	80

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Many small producers in the Washington area are only beginning to explore expanded markets for their products and alternative production systems to grow their small farm businesses. Large agricultural producers also are seeking information and training to enhance their production practices in environmentally and socially responsible ways.

What has been done
?Local workshops on direct marketing and alternative productions systems.
?Creating a Sustainable Future for Agriculture Conference
?Climate Friendly Farming Program
?Soil and water conservation practices
?Waste Management / research and demonstrations

?Biofuels
?Anaerobic Digester Field Day for Dairy Producers
?Development of local Farmers Markets
?Livestock Quality Assurance Educational Program
?Good Agricultural Practices Workshops

Results

?380 small farm operators recognized the opportunities in alternative crop production system and value-added products, and 81% implemented one or more strategies to utilize value added markets.
?68 large farm and ranch operators adopted value-added marketing to a local network of consumers as a focus for diversifying revenue and highlighting social and environmentally responsible production practices.
?5 Confined Animal Feeding Operations implemented new strategies in managing waste streams, including anaerobic digesters
?15 farmers utilized oil seed crops in their crop rotations and a local biofuel refinery to produce biodiesel for their tractors
?75% of program participants (169) increased their knowledge about oilseed crops and management through Extension programs. Oilseed (canola, camelina) production is in the very early adoption phase. Long term goal is to increase oilseed acreage from 15,000 acres to over 400,000 acres.
?Anaerobic Digester Training and Field Days - An on-line survey was conducted to assess impact indicators and information learned or gained. 89% of attendees increased (moderately or greater) their general knowledge about anaerobic digestion technology. 100% of attendees increased (moderately or greater) their knowledge of phosphorus removal technology. 95% of attendees increased (moderately or greater) their knowledge about the complexity of economic decisions and anaerobic digesters. 68% of attendees increased (moderately or greater) their knowledge about composting of manure solids. 79% of attendees increased (moderately or greater) their knowledge about utilization of manure nutrients for grass production. 89% of attendees indicated that the information presented was at the "just right" level. 78% or respondents indicated that the information would be used for professional development. 39% indicated that the information would be used for making recommendations to producers. 17% indicated that the information would be used for policy implementation. 50% indicated that the information would be used for regulatory of policy discussion.
?PNW Anaerobic digester projects (WA, OR, ID) - 12 projects operating currently and 2 more are under construction (est. 2011)
?National Livestock and Poultry Environmental Learning Center Webcast Programs for 1500 participants resulted in 82% improved learning based on online surveys.
?113 small scale poultry producers learned approved on-farm processing and qualified to sale processed poultry directly to consumers.
?Over 500 bio-solids managers, regulators, and farmers were trained in the proper, safe use of municipal biosolids as soil amendments for agricultural land and urban settings, with 80% indicating application of one or more concepts presented in the training.
?65 professionals serving the turf industry were trained in phosphorus management on landscapes with 65% implementing at least one new practice in their work.
?195 farmers were trained in Good Agricultural Practices (GAP) with 92% improving knowledge and 50% applying the practice standards.
?1500 youth producers and 78 adult producers were certified in ?Pork Quality Assurance? through a series of educational programs with 83% adoption of skills and practices taught in improving product quality and value-added practices.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
205	Plant Management Systems
307	Animal Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #4

1. Outcome Measures

Percentage of educational activity attendees that increased their knowledge of organic production practices, regulations, and marketing opportunities.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	85	90

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Organic production practices and marketing opportunities for a growing number of organic producers is an important component to the Extension?s portfolio of program offerings. As demand and interest in organic food has continued to increase farmers have responded with increased interest in securing the most current and reliable information to guide their organic production enterprises.

What has been done
?Northern Organic Variety Improvement Collaborative (NOVIC): As a collaboration between OSU, OSA, WSU, Cornell, and University of Wisconsin, and conducted organic seed-lot trial planning with national network to build organic seed stocks.
?Variety trials were conducted on 13 crops, with over 180 varieties in total on 5 organic farms. Field days and workshops disseminated results of these trials.
?North Olympic Growers Network for organic seed was established.
?Over 55 organic workshops, field days, and other training programs were offered to current and prospective organic farmers.

Results
?97% of 635 participants in an organic workshops state-wide gained new knowledge and skills in organic production practices with 55% changing weed management practices and 40 % adopting new fertility practices.
?Organic practices to manage orchard pests in organic tree fruit was adopted by 51% of program participants with a calculated economic benefit of $16,000 in 2010.
?74% of organic farmers returning surveys (n-=62) utilized the ?Organic Ag Trends? outreach information supplied by Extension to improve profitability of their organic farm by an average of 8%, or $47,200 on organic apples.
?Ninety-five Organic Vegetable Program participants enhanced subject matter knowledge by an average 50% across three tiers of growers from beginning organic producers, to experienced producers, and then large commercial operations. Commercial operations implementing recommended practices reported an additional six weeks of production into the fall months and as estimated increase of 25% for enterprise profitability.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
307	Animal Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #5

1. Outcome Measures

Percentage of educational activity attendees that increased their knowledge of effective pest management practices, conservation tillage systems, and/or riparian management methods that protect endangered species and the environment and safeguard human health.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	85	85

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Farm and orchard managers and workers need valid and practical information on best management practices for various agricultural operations to minimize negative impacts to native species of plants and animals, prevent resource degradation, and safeguard human health.

What has been done
?Orchard Sprayer Field Day
?Riparian Management Field Days
?Pasture Walk Series
?Small Fruit Field Days
?A variety of local workshops and short-courses
?Internet Courses on IPM and Pesticide Safety
?Monitoring (trapping) System for new insect pests

Results
?85% of the 221 orchard managers and workers participating in Extension?s orchard automation program improved their knowledge of sprayer technology and adopted practices to modify pesticide spray systems to reduce overspray and minimize impacts to non-target species and the environment.
?73% of 330 participants in grazing management field days gained new information and knowledge regarding best management practices for grazing riparian areas, and improved their understanding of state rules associated with riparian zones.
?95 livestock producers changed management practices and eliminated full-time grazing of riparian areas by installing fencing to appropriately manage animal impact of these sensitive areas.
?89% of 260 grower participants in small fruit workshops and field days increased their knowledge and ability to perform scouting techniques and determine thresholds for management of key pests in blueberry, raspberry, and blackberry.
?Drosophila suzukii (Matsumura), SWD, the spotted wing drosophila, was first reported in Washington State on 10 August 2009. Their propensity to lay eggs in ripening fruit could result in annual losses of $145 million to harvestable berries grown on 15,300 acres in Washington State. If annual losses are conservatively estimated at 20%, then yearly losses in Washington State will total $29 million for red raspberry, blueberry and strawberry. 300 farmers were trained to monitor and treat for this pest in 2010 with 100% gaining new knowledge on control of this important pest.
?Fungicide resistance management program across the Columbia Basin reduced incidence of powdery mildew in a variety of high value crops including apples, cherries, hops, peaches/nectarines, and wine grapes by 25% in 2010 with a dollar benefit of $1.5 M.
?Web-based efforts in IPM and pesticide safety reached over 65,000 individuals in 2010 representing a 29% increase is visits to the sites over 2009.
?4500 licensed pesticide applicators were trained in 2010 in pesticide safety and approved practices with assessed knowledge change of just over 85% and intent to apply the knowledge at 75%.

4. Associated Knowledge Areas

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

112	Watershed Protection and Management
205	Plant Management Systems
216	Integrated Pest Management Systems
307	Animal Management Systems

Outcome #6

1. Outcome Measures

Number of organic farms and ranches certified in Washington that were assisted by Extension programming or through partnerships between Extension and other agencies and organizations.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	80	92

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
There are 529 farms in the state with certified organic land (1.5% of all farms). There are an unknown number of additional farms that produce organic products but are exempt from certification and choose not to certify. Over 600 farms have applied for organic certification. About 45,000 acres of land in the state were certified organic, with about 41,000 under active farming. This represents about 0.51% of all cropland in the state.

What has been done
WSU Extension working with the Washington State Department of Agriculture, Tilth Producers of Washington and others have developed and delivered educational programs and materials to assist organic growers refine production practices as well as marketing strategies for a growing organic marketplace. This collaboration included a variety of events, workshops, field days, and demonstrations to current and aspiring organic producers.

Results
Over 230 organic farms were directly assisted by WSU Extension programming in 2010.This assistance included training and information in soil fertility management, organic pest management, organic seed production, cultivar selection, marketing, and general farm management. Aggregated evaluations indicated 92% of participants increased knowledge of organic production and marketing practices.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
307	Animal Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #7

1. Outcome Measures

Estimated reduction dollars spent for chemical pesticides among farms utilizing integrated pest management strategies.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2000000	14000000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The use of chemical pesticides represents a highly significant cost to agricultural enterprises throughout Washington, as well as potential threats to non-target species and the environment. Integrated pest management (IPM) strategies represent an effective and cost efficient approach to pest control across a broad range of Washington crops.

What has been done
Research was conducted to develop new pest management tools and strategies across many crops and environmental conditions. Workshops, field days, newsletters, demonstrations, commodity meetings, short courses, and other methods were used to inform stakeholders of the options available to reduce pesticide applications and yet achieve reasonable control of key pests.

Results
Educational programs on newly registered pesticides for cranberries resulted in adoption by over 95% of growers, and reduced overall pesticide inputs by more than 300,000 pounds with an estimated cost savings of $1 million in input cost to growers in the Pacific Northwest
The deployment of biological control practices for a variety of agronomic and horticultural crops provided partial control of a variety of important pest species and saved Washington farms and orchards an estimated $7.5 million on insecticide applications in 2010.

Deployment of a newly developed pheromone trap for apple leaf midge is underway with apple orchards as an aid in effectively monitoring pest populations and timing control strategies. Use of this technique has reduced pesticide applications in orchards by an estimated $2.5 million in 2010.
Demonstration of the efficacy of spinosad (organic product) to replace Organophosphate and Carbamate products in the control cherry fruit fly has been broadly successful, and grower adoption reduced control costs of this pest in cherry orchards by $3.0 million in 2010.

4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems

Outcome #8

1. Outcome Measures

Number of acres on which habitat and aquaculture production was improved as a result of Extension programming.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	18000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Audubon Society ranked the spartina invasion in Willapa Bay in south west Washington State the nation?s second largest threat to shorebird habitat in the country. Spartina is a non-native cordgrass that forms dense stands and colonizes mudflat areas, displacing native plants and animals. Affected areas become broad marsh flats cut by narrow channels, destroying the habitat for native wildlife and negatively impacting fisheries and shellfish habitat. Spartina has impacted shorelines that support the base for Washington?s $60 million shellfish industry and at one time covered more than 20,000 acres in Willapa Bay alone leading to drastic declines in shorebird and waterfowl species, eelgrass beds and native salt marsh habitat.

What has been done
WSU Extension horticulture specialist Dr. Kim Patten?s applied research and extension programs have been instrumental to restoring the health of Willapa Bay in southwestern Washington and played a major role in rejuvenating shellfish and shorebird habitat while increasing the productivity

of the aquaculture and cranberry industries. WSU Extension developed and deployed techniques leading to effective control of a major invasive weed (spartina) leading to major improvement in environmental and economic health of the bay and concurrent re-establishment of endangered wildlife and commercial shellfish operations. This work has also had considerable success toward controlling another invasive species, burrowing shrimp, which threatens the state?s $35 million shellfish industry. Prior to WSU?s work, the state spent fifteen years and tens of millions of dollars in a failed attempt to halt the spread of this invasive species.

A multifaceted program was created to incorporate biological, mechanical, and chemical control tools and provided training and outreach on implementation of the most effective strategies. WSU also developed protocols for monitoring the effectiveness of that control effort and the ecological restoration that followed. WSU Extension faculty facilitated extensive collaboration among Willapa Bay stakeholders including the Willapa National Wildlife Refuge (WNWR), Pacific County Board of Commissioners and Noxious Weed Control Board, the Willapa-Grays Harbor Oyster Growers Association, US Environmental Protection Agency, US Army Corps of Engineers, US Fish and Wildlife Service, and the Washington departments of Agriculture, Natural Resources, Fish and Wildlife, and Ecology, plus the Nature Conservancy, Ducks Unlimited, Pacific Joint Ventures, The Audubon Society, and the Shoalwater Bay Indian Tribe. Patten elicited input on an international level from scientists and land managers in Great Britain, Australia, New Zealand, South Africa, Spain, and Ireland.

Results

WSU Extension program has resulted in registration of a new herbicide (?Habitat?) and safer surfactants. These products have enabled the state to nearly eradicate spartina over a 5-year period. As a result of WSU, similar success has been seen against spartina in Grays Harbor, Puget Sound, and San Francisco Bay. In Willapa Bay, shorebird populations have increased dramatically every year following treatment, growing from near zero to more than 500 per acre across many thousands of acres of prime habitat. The annual increase in shorebird usage in this last year alone ranged from 140 to 590%. This successful eradication and habitat restoration has been the largest of its kind in any estuary in the world. And, by restoring more than 80% Willapa aquaculture ground, prevented the loss of $26 million in annual revenue and 480 direct jobs. Projected net annual savings to the local economy has been $78 million and 1,440 jobs, and twenty thousand acres of prime estuary habitat for shellfish, salmon and shorebirds have been restored. Without this intervention, 100% of the commercial clam grounds and 80% of intertidal oyster fattening grounds would have been permanently destroyed.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

Hiring freeze, travel freeze and general anxieties regarding state budget and university budget response caused delays in hiring and building effective programmatic teams. Turnover in administrative leadership at Washington State University will most likely impact the programs in the short term. In the next year, however, WSU will restructure from geographic (District administrative units) to program units. This should result in fewer and more focused teams of faculty and better integration of research and extension efforts. WSU is well positioned, especially compared to peer institutions, for continued strong and well funded partnership with county government, entrepreneurial faculty who receive competitive grants and awards for their effort, and strong network of well trained volunteers.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Case Study
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

Community Development

WSU Extension's Rural Community Vitality Program seeks to create thriving communities for all individuals by helping rural residents understand poverty, build leadership skills, develop action plans for their communities, and provide peer coaching. Building capacity in this way leads to positive, sustainable changes in small rural communities. The Community Vitality Program wields two national, comprehensive community prosperity initiatives in Washington state: the Northwest Area Foundation's Horizons program, and the Annie E. Casey Foundation and Aspen Institute's Rural Family Economic Success (RuFES). Additionally, vitality efforts include the Microenterprise Assistance Pilot Project (MAPP), and an annual Rural Conference. Numerous private and

public organizations have partnered with communities in this program to empower residents so that together, they can ameliorate poverty and economic disadvantage common to small rural communities. Documentable progress has been made in the 40 communities that have participated in this program.

Impacts Achieved:

A professional evaluation team was assembled to evaluate the successes in each community for each specific program area. Surveys, observations, interviews, and focus group methodology were incorporated.

National evaluators documented "consistent and significant growth in community leadership, expanded participation in civic life and community decision-making by often previously disenfranchised groups, and dramatically increased civic engagement."

In 2009, five years after the conclusion of the first Horizons program:

55% of Horizons communities are still actively implementing the poverty reduction plan developed in the program.

51% of Horizons communities are ameliorating poverty by helping people meet urgent needs such as food, clothing, etc.

40% of Horizons communities continue efforts towards jobs creation, job skills training, micro-enterprise or other business development.

Thirty-five of the alumni communities have a new organization empowered to receive grant funds to support the communities' development goals, resulting in $5.8million in new funding for community projects.

Key Items of Evaluation

Horizons program:

Thirty-five of the alumni communities in Washington State have a new organization empowered to receive grant funds to support the communities' development goals, resulting in $5.8million in new funding for community projects.

Each Horizons community developed their own leadership team or steering committee to continue the goals of the program. That capacity has remained in the communities: 325 youth and adults have been trained as group facilitators. They have practiced their skills helping 1,928 teens and adults participate in ten hours of discussion focused on creating a more thriving community.

In interviews conducted in Horizons alumni communities, it has been found that people now understand the causes and extent of local poverty. They also report dramatically increased civic engagement, with greater attendance at city council and school board meetings, more participation on local boards and with civic organizations, and more volunteerism.

Three RuFES teams members prepared EITC tax credit forms for free and brought $583 back to their local economy. Four more Horizons groups are preparing to offer the free service in 2011.

Through MAPP, 176 rural and Latino prospective business owners increased their understanding of business planning, market research; of which 135 received start-up business mentoring and direct coaching. During the four-month pilot program, 33 new

partners were engaged.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Create and Sustain Vibrant Communities and Urban Neighborhoods

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	70%			
805	Community Institutions, Health, and Social Services	30%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	35.0	0.0	0.0	0.0
Actual	17.5	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
354901	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
354901	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
3661249	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The WSU Extension Community Development program will conduct educational and development

programming and create educational materials and other resources in the following topical areas.

•Helping communities deal with challenging issues through facilitation and consensus building. •Helping leaders make better decisions by providing them with user-friendly demographic and social data coupled with training on how to both interpret and utilize these data. •Conducting leadership and organizational management training for community leaders through the Certified Public Officials program, the Policy Consensus Center, and the Partnership for Rural Improvement. •Helping communities and organizations bridge the digital divide through education and awareness of needs and issues. •Helping communities, organizations and individuals become more energy efficient and energy sustainable. •Supporting economic development by connecting communities and individuals with critical needs to solutions originating from all of the colleges and campuses of WSU.

2. Brief description of the target audience

Community leaders, elected and appointed officials. State officials, tribal leaders, non-profit leaders, community residents.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	30000	5000	500	0
Actual	4871	12800	482	1098

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

Patent Applications Submitted

Year: 2010
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	2	0	
Actual	7	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of integrated research and extension Community Development programs performed within the state, across state-lines and internationally.

Year	Target	Actual
2010	10	14

Output #2

Output Measure

- Number of contacts with minority stakeholders within the state.

Year	Target	Actual
2010	10000	342

Output #3

Output Measure

- Number of Extension Educators creating culturally competent programs to increase the diversity of Extension program participants and partners.

Year	Target	Actual
2010	100	50

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of persons completing a WSU leadership development program that serve in a community/county/state or agency leadership role (appointed, elected, non-profit, volunteer community group).
2	Percentage of attendees at educational activities that increased their knowledge about leadership, organizational management, and community betterment.
3	Percentage of clients that change their mode of operation to include collaborative approaches to public policy development and/or number of clients that incorporate applied research findings and research-based recommendations into public policy.

Outcome #1

1. Outcome Measures

Number of persons completing a WSU leadership development program that serve in a community/county/state or agency leadership role (appointed, elected, non-profit, volunteer community group).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	100	254

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Strong leadership remains central to organizational, community, and local government success. With a weak economy and rapid turnover of local leadership, training the next generation of leaders remains essential to the survival of most community organizations. In addition, more non-profit and governmental leaders are retiring; successful training and succession planning can help ease the effects of rapid turnover as well as keep Washington competitive in both the public and private sectors.

What has been done
WSU Extension has a long history of local leadership training. In 2010, leadership training was conducted through a number of Extension entities, mostly notably the Division of Governmental Studies and Services (DGSS), that supports local government officials and state agency managers; the Horizon Project, aimed at poverty reduction in small rural communities; and LeadershipSkagit, a leadership training program aimed at community and business leaders.

Results
All of the programs listed above have rigorous and comprehensive curricula. The aim is to provide an intensive experience for existing and the next generation of decision-makers rather than trying to reach large numbers. At the same time, Extension programs positively influenced most counties in the State, two state agencies, three tribes, over fifty communities, and a multitude of non-profits and community organizations. In 2010, among the 27 participants in LeadershipSkagit, 7 have taken leadership positions in their communities and 100% undertook a community project. The WSU Horizons Project provided training/education to 23 local elected officials; additionally, 12 participants pursued elected or community leadership positions.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Percentage of attendees at educational activities that increased their knowledge about leadership, organizational management, and community betterment.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	90	95

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The goal of all WSU Extension leadership programs is twofold: first, obtain leadership skills, and second, use these new skills to better an organization, community or governmental entity.

What has been done
To judge whether the goal of leadership training is met, Extension staff include participant self-reporting in their programs. This often takes the form of session and/or program evaluations to gauge training quality and knowledge gained. In addition, the leadership programs funded through private foundations include formative and/or summative evaluations of the program?s effectiveness. The results of doing both participant and program evaluations allows WSU Extension to keep materials current and tailored to those it serves.

Results
The WSU Horizon Project conducted the State?s second annual rural development and leadership conference. Of the 175 participants, 52 returned evaluations on the conference. Eight-six percent (86%) indicated they had increased their knowledge of community leadership/management/ betterment. In the 2010 advanced facilitators, board training and managing public meetings courses conducted in Skagit County, 100% of the 94 participants reported increases in their leadership skills. In a 2010 survey of the 2007 through 2009 participants of the program, the 77 respondents to the survey all stated they had increased their individual knowledge and use of leadership skills.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

Outcome #3

1. Outcome Measures

Percentage of clients that change their mode of operation to include collaborative approaches to public policy development and/or number of clients that incorporate applied research findings and research-based recommendations into public policy.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	95	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Public policy issues in the Northwest remain complex and numerous. Additionally, with a weakened state economy and decreased public funding, conflicts among stakeholders on how to ?best? resolve problems have become increasingly tense and polarized. These conflicts commonly result in lengthy and expensive litigation that produces poor and unsustainable outcomes.

What has been done
WSU Extension programs focus on assisting local, state, federal, and tribal governments (and their agencies) function in an informed and effective manner. Assistance from WSU takes various forms such as applied research, process facilitation, collaborative problem solving, and training. Program faculty and staff do the majority of their work through WSU Extension, DGSS, and The William D. Ruckelshaus Center - a joint endeavor with the University of Washington and WSU Extension. Additionally, a number of county-based Extension activities are undertaken each year. WSU Extension faculty work on critical societal issues such as the following: homeland security; endangered species and environmental stewardship, climate change; effective local law enforcement; natural resources management; agricultural vitality; mitigation of natural disasters; hospital patient care; local government management; and citizen involvement. Faculty has engaged with the following: local, state, federal, and tribal officials; agency staff; law enforcement

officials; environmental, agricultural and ?better government? organizations; private foundations and numerous non-profits.

Results

The William D. Ruckelshaus Center successfully completed a three-year negotiation among agricultural groups, environmental organizations and county governments to develop the framework for a voluntary based program that protects environmentally critical areas while retaining local agricultural viability. In 2010, the framework of these negotiations became proposed state legislation. In addition, negotiation participants began to pursue federal funding to implement the legislation. The WSU Division of Governmental Studies and Services completed a survey of 89 hospitals, querying the implementation of state legislation calling for the creation of a nurse staffing committee for each hospital. The nursing unions and the hospital association have joined to use the survey findings to improve patient care.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Improve Health and Wellness of the Residents of Washington

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	55%			
704	Nutrition and Hunger in the Population	10%			
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	15%			
724	Healthy Lifestyle	20%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	25.0	0.0	0.0	0.0
Actual	17.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
355400	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
355400	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
3665280	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

WSU Extension will develop, evaluate and disseminate educational programs and curricula that increase health literacy and facilitate the adoption of health behaviors that lead to the prevention and effective management of chronic disease. The major components of our educational activities can be grouped into three areas:nutrition education, including dietary quality, healthy lifestyle promotion and food security issues; food safety, including safe food handling and preservation, and hand sanitation/hygiene; and chronic disease management, including self-management to reduce complications and prevention education to reduce future incidence.

Nutrition education activities are largely delivered in partnership with local institutions, including schools and social service agencies. Youth and adult participants are reached directly through workshops and lesson series, as well as indirectly through newsletters, media broadcasts and social marketing efforts. Innovative delivery methods such as public kiosks and web-based modules are also planned. Included in this work are activities focused on obesity prevention and intervention through changes in diet quality and physical activity levels.

Food safety activities include workshops/classes for consumers, commercial food safety training for food workers, phone hotlines, education booths at public venues, media features, and the Germ City: Clean Hands, Healthy People Program. Volunteers are engaged in food safety program delivery in some areas.

Chronic disease management programs will be delivered to individuals through workshops and series lessons, and also in partnership with health care providers and employers. Indirect methods will include newsletters, media, web-based information and social marketing efforts. While initial educational interventions in Washington have focused on diabetes, it is anticipated that over time our efforts will be expanded to address other chronic diseases.

2. Brief description of the target audience

Priority audiences are groups underserved by traditional health care systems because of low income, language barriers, geographic isolation or other challenges. Outreach to others serving these groups such as health care providers, employers, social service agency personnel, child care providers, school personnel and local decision-makers are an additional audience. Professionals in food service and processing industries are a specific audience for food safety efforts.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	50000	100000	25000	0
Actual	176168	61658	327170	15050

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

Year:	2010
Plan:	0
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	2	0	
Actual	2	1	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Percentage of culturally diverse participants in nutrition and chronic disease management programs.

Year	Target	Actual
2010	50	46

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percentage of participants reporting improved nutritional quality of diet
2	Percentage of participants reporting improved food handling/hygiene practices

Outcome #1

1. Outcome Measures

Percentage of participants reporting improved nutritional quality of diet

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	58

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The child obesity epidemic is a product of the environments created for children - by their families, their communities, their schools, and the industries responsible for advertising to them. Today's children are likely to be the first generation to live shorter, less healthy lives than their parents. Research estimates individual behaviors and environmental factors are responsible for about seventy percent of all premature deaths in the United States. Health and well-being encompass a complex array of factors including physical, social and emotional health. Obesity and overweight not only impact the physical health of youth, increasing the risk of chronic diseases into adulthood, they also impact social and emotional development of children. Obesity has been linked to decreased self-efficacy, withdrawal from peers and rejection and academic achievement. Given the increased risk of obesity and the complexity of the problem, improving the physical health of our children is a high priority. In 2008, one out of four student in grades 8, 10 and 12, in Washington State were obese or at risk of becoming overweight. Adequate nutrition and physical activity are essential for maintaining health and well-being. Less than thirty percent (28.1%) of youth reported eating the recommended five servings of fruits and vegetables, and only 19% achieved the recommended levels of physical activity.

What has been done
In FY2010, Food $ense (WSU Extension?s name for SNAP-Ed and EFNEP) enrolled nearly 60,000 youth in nutrition education programs in 27 counties and 5 tribes. Youth were reached through partnerships with 316 schools, Head Start/ECEAP programs other youth services partners. Youth participants received an average of seven lessons per child. Children from preschool to age 17 were reached. Evaluation data was collected through multiple sources to assess impacts of the program on child behaviors. Instruments included a pre-post evaluation survey administered in the classroom; a parent survey administered to recipients of a newsletter for families of participating children; and a Teacher Observation Form for use in preschool through grade 2 to capture data for younger children who cannot reliably complete survey

instruments.

Results
Self-reported knowledge, skill and behavior change indicators for youth grades 3 and above participating in Food $ense document improvements related to dietary quality and better health status.
-Fifty nine percent of youth (n=13,432) reported eating a variety of foods more often, with 57 percent (n=12,255) reporting daily consumption of fruits and vegetables.
-68 percent (n=14,310) increased their understanding of the relationship between nutrients and health.
-58 percent (n=13,388) were better able to identify the best food sources of leader nutrients, and
-67 percent (n=9,573) increased physical activity at the standard of at least 60 minutes daily for most days of the week.
For younger children (Pre-K to grade 2), teachers observed the following changes after participation in Food $ense lessons:
-69 percent (n=631 teachers) said that children made healthier meal and/or snack choices.
-70 percent (n=556 teachers) reported that children increased fruit and vegetable consumption.
-80 percent (n= 579 teachers) noted that children were more willing to try new foods.
Changes reported by parents were consistent with those reported by their children:
-73 percent (n=3953) report eating more fruits and vegetables.
-72 percent (n=3367) were buying healthier snacks for their children.
-65 percent (n=4144) were more physically active during the week.
-63 percent (n=862) said they are eating more meals together as a family, an activity that research links to improved nutritional status of children.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

Percentage of participants reporting improved food handling/hygiene practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	35	68

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Consistent and careful hand washing is documented in the research literature as an effective strategy for preventing food-borne illness. These illnesses are both a result of improper hygiene/sanitation in homes and in retail settings. In a 2006 study of food-borne illness in Washington State, 36 of the 51 reported outbreaks (71%) involved restaurant settings. Ill food workers and bare-handed contact with retail foods are consistently the top factors contributing to food-borne illness outbreaks in the state. As a consequence, educating both consumers and retail food workers can have a significant impact on public health.

What has been done
WSU Extension?s Food $ense program includes a food safety objective in which hand washing is one educational component. In addition, three counties in Washington (Clark, Cowlitz and Thurston) partner with local health departments to offer retail food safety education using a curriculum certified by the WA State Department of Health. The training was available in Spanish in two of the three counties. The food safety courses addressed the top food safety regulations and practices that prevent food-borne illness outbreaks. About 9950 food workers attended classes in 2010.

Results
Food $ense evaluation data documented the following changes in hand washing practices:
-81 percent (n=8354) of SNAP Ed youth participants reported washing hands before eating and preparing food.
-80 percent (n=1211) of SNAP Ed parents said they washed their hands more often before eating and preparing foods as a result of the program.
-82 percent (n=641 teachers making formal observations) of young children in the SNAP Ed program washed their hands more consistently before eating.
In a post-training survey of the retail food education program (n=6995),
-56 percent of food workers reported improvements in washing their hands the right way and at the right time.
-53 percent also reported greater awareness of the importance of not working with food when they were sick.
-54 percent also indicated they used utensils, deli papers, or single-use gloves to keep from touching ready-to-eat foods in their establishments.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Empower Youth and Families to Achieve Social, Economic and Educational Success

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
802	Human Development and Family Well-Being	20%			
806	Youth Development	80%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	26.0	0.0	0.0	0.0
Actual	37.5	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
762301	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
762301	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
7861681	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

WSU Extension works with all of the peoples of Washington State to address positive youth development issues by providing information, experiential education, activities, technical assistance and local capacity enhancement. Our programs are available to all without discrimination. Indeed we are

proactive in addressing the special needs of unique youth audiences and the adults who support their efforts.

WSU Extension will address this goal directly through educational programs, demonstration activities, and facilitated processes. Training programs and professional development will be conducted for faculty, staff, volunteers, and partner organizations as well as for specific groups such as professional child care providers. Particular outreach efforts will be made for underserved and emerging populations.

Educational programs will address the following:

•Strengthening a sense of belonging for youth so that they will feel emotionally and physically safe in these educational settings and develop positive relationships with supportive, caring adults •Increasing decision-making skills, relationship building, understanding of self, learning, management, navigating group processes and communication skills in youth •Decreasing negative behaviors (shoplifting, drug use, vandalism, smoking etc) in youth who actively engage in 4-H •Increasing adoption rates of health and wellness indicators such as regular exercise activities and improved nutritional choices •Improving safety and quality of child care •Mastering relevant skills and technical knowledge areas for youth success •Applying best practice prevention programs (e.g., the Strengthening Families Program for Parents and Youth Ages 10-14) that engage both parents and their youth will be conducted and evaluated statewide with outreach in both English and Spanish languages.

2. Brief description of the target audience

The youth, adults, and families of Washington and the agencies, decision makers and organizations that support and mentor them.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	9000	15000	70000	0
Actual	6554	7236	87588	93325

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

Patent Applications Submitted

Year: 2010
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	6	0	
Actual	16	0	16

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of 4-H Youth Development educational events/activities/programs designed for life skill enhancement.

Year	Target	Actual
2010	800	155486

Output #2

Output Measure

- Number of participants in WSU Extension programs designed to create and maintain healthy family structures.
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Difference (%) in grade point average (GPA) for former 4-H youth at WSU compared to peers
2	Number of fromer 4-H youth registered at WSU as incoming freshman.
3	Percentage of educational activity attendees that increased their positive life skill application.
4	Percentage of parents targeted for intervention that demonstrate improved scores on parenting behavior scale.
5	Number of former 4-H youth graduating from WSU.

Outcome #1

1. Outcome Measures

Difference (%) in grade point average (GPA) for former 4-H youth at WSU compared to peers

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	2	22

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Educational attainment for Washington?s youth has reached crisis level with fully 1/3 of all of young people entering 9th grade failing to graduate in five years. The statistics become more horrific when examining youth by racial demographics where nearly 2/3 of Hispanic males fail to graduate. These statistics foreshadow a societal model that is economically unsustainable and morally unconscionable. Without significant increases in youth academic attainment we are creating and condemning a generation as a permanent underclass.

What has been done
The 4-H Youth Development Program has a strong emphasis on the Essential Elements of Positive Youth Development. These Essential Elements are a fundamental process for positive youth development undergirding our total 4-H Program. Whether the actions are high content/low context like many of our 4-H Animal Science activities or low content/high context such as a residential camping program, the emphasis on the Essential Elements produces strong life skill development that leads to successful youth adulthood transitions. Over 155,000 different 4-H activities and events were conducted in 2010 designed to strengthen life skills including 1,456 4-H clubs, 2,000 school based enrichment activates, 153 after school clubs and 42 camping programs. In WA State 4-H sharpened its focus on preparing adults to be high quality mentors for youth. In 2010, 2,565 adult volunteers reflecting 39% of the total 4-H volunteer base participated in at least one life skill building educational opportunity for enhancing their mentorship skills in positive youth development (PYD).

Results
Washington 4-H youth continued to outmatch their non-4-H peers in academic competence grades 9-12 and demonstrated stronger attachments and connections to their schools and communities. This improved engagement with their school results in increased academic success and academic aspirations for young people. As part of annual year end club reports,

volunteers were asked to report on the high school graduation rates and entrance into post-secondary study for their program completers. In 2010, 84% of youth entered post-secondary education with a 92% graduation rate (compared to Washington State average of less than 70% graduation rate). Hence, the anticipated lifelong earning power of 4-H members will be collectively better than their peers and hence strengthen their over-all contributions to society.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Number of fromer 4-H youth registered at WSU as incoming freshman.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	250	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Not reporting on this outcome measure.

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Percentage of educational activity attendees that increased their positive life skill application.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	75	58

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Youth development is a process of mental, physical, social and emotional growth during which young people prepare to live a productive and satisfying life within the customs and regulations of their society. People who develop educational programs and curricula for youth are in the business of providing educational opportunities through which youth can learn information and transform that information into knowledge and develop the skills they need for successful adulthood.

Youth development experiences of high quality don?t just happen. The best youth development experiences are carefully planned (a) to encourage life skill development while delivering subject matter contend and (b) to achieve specific results. It has become increasingly important to be accountable for resources expended by documenting program impact. By clearly stating desired changes as program objectives, youth development experiences can be evaluated more effectively to determine if the program succeeded in making the intended positive difference in the lives of youth.

A skill is a learned ability to do something well. Life skills are the abilities individuals can learn that will assist them in living a productive and satisfying life. The goal of youth programming is to provide developmentally appropriate opportunities for young people to experience life skills, to practice them until they are learned, and be able to implement them as necessary throughout their lifetimes. Through the experiential learning process, youth internalize the knowledge and gain the ability to apply the skills appropriately.

What has been done
In 2010 4-H life skills education was conducted in all 39 of Washington?s counties. There were 155,486 distinct 4-H life skill events/activities/programs reaching 87,588 youth. The life skill

events/activities/programs included, but were not limited to: State 4-H Teen Leadership Conference, 4-H Know Your Government Conference, club work, school enrichment, camping and special focus/emphasis methodologies were employed. Specific examples of life skill education included: the completion of on-online interactive SET units for youth and the adults who support them; summer day camping programs for urban disadvantaged/underserved low income youth; twenty (20) local engagement sites in the 4-H National Science Experiment Day; 4-H Eco-Stewardship Program (DNR National Award winner); in short a myriad of live skills based educational programs were conducted statewide.

Results
Of this very broad brush of 4-H life skill activities 58 were formally evaluated for five more of the 35 indentified life skills. Depending upon the program life skill development increased 5 to 90 percent.

4. Associated Knowledge Areas

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

Outcome #4

1. Outcome Measures

Percentage of parents targeted for intervention that demonstrate improved scores on parenting behavior scale.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	60	82

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Research conducted by Washington State Department of Social and Health Services on risk factors for prevention of substance use and abuse in 10-17 year olds show that youth across the state are at risk of early problem behavior as measured by alcohol and drug arrests, property crime arrests, and vandalism arrests in 10-14 year olds. Other risk factors that are prominent across the state are family history of substance abuse, low school achievement in 6th grade, alcohol arrests in 10-17 year olds and substance use in 10-17 year olds. Each of these indicators

of risk is a compilation of five years of data gathering, most recently updated in the fall of 2006. Data source is the Department of Social and Health Services web site, Research Division. A WA State Superintendent of Public Instruction report recommends engaging parents and families in the late elementary and middle school years to reduce risk of adolescent substance use and other problem behaviors. Studies by many researchers have found a model that includes both parents and youth to be most effective in long-term behavior change and reducing risk.

What has been done

WSU Extension faculty selected SFP in 1999 as a model for use in Washington State and has spearheaded statewide training, dissemination and research since that time. In 2010, Extension began its first focused urban dissemination of the program in King County (Seattle) with funding support from the Raikes Foundation. Because the population of families was more multi-cultural than the demographics of families generally reached by SFP across the state, the effectiveness of the model for urban families was evaluated. Twelve programs were delivered in collaboration with partners from schools, parks and recreation programs, and social service agencies. Ten programs returned pre and post evaluations, representing a sample of 90 parents/caregivers and 92 youth ages 9 to 15. For families reporting race/ethnicity, 27 percent were White/Caucasian, 23 percent were African American/Black, 23 percent were Latino, 8 percent were Asian/Pacific Islander and 2 percent reported other races. Seven of the programs were offered in English, 1 in Spanish only, 1 in both English and Spanish and 1 in Somali for Somali/Bantu families. Retention rates over the seven week program were 87 percent for youth and 62 percent for families, which are higher than the average state rates for both groups

Results

The WSU Extension Strengthening Families Program evaluation collected data at three points: a true pretest before program participation, and a retrospective pretest and posttest after program participation. King County SFP participants reported markedly greater improvement from before to after the program than did Washington participants on average. For example, King County parents' overall change scores were 61% higher than Washington change scores. Many parents entered the program with lower scores than average and then ended the program with higher scores than average.

Although the absolute change from pretest to posttest (for example, .49, or half a point on a 5-point scale) may appear small, in the clinical trial of the SFP, such positive short-term outcomes resulted in long-term reduced rates of substance use initiation (alcohol, marijuana, and tobacco) among youth whose families who attended the program. In addition, SFP youth who did initiate substance use were likely to use less often and less likely to abuse substances (e.g. binge drinking). Thus, it is reasonable to expect that short-term results of the SFP evaluation in King County will have long-term benefits for participating families.

For parents/caregivers, measures address specific family risk and protective factors for youth substance abuse that include: rules about substance use, positive involvement with youth, family harmony and communication. King County parents and caregivers increased scores between pre and post measures for all subscales at a statistically significant level ($p<0.05$). Positive change on these scales indicates that parents/caregivers reported that they have improved their parenting practices over the course of the program. The youth evaluation instrument also assessed change in family risk and protective factors, specifically addressing attachment, rewards, involvement, family harmony and family management. Youth scores on all subscales improved, with four of five reaching statistical significance ($p<0.05$). Positive change on these five scales indicates that youth think parents/caregivers have changed their parenting practices over the course of the program. The consistency between youth and parent/caregiver responses suggests that the program is an effective family intervention. Because the sample for this evaluation was multicultural, the results also suggest that SFP is an effective prevention program for a variety of

cultural groups.

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

Number of former 4-H youth graduating from WSU.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	300	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Not reporting on this outcome measure.

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- Case Study
- Comparisons between program participants (individuals, group, organizations) and non-participants

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Enhance Natural Resources and Environmental Stewardship

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	30%			
121	Management of Range Resources	5%			
123	Management and Sustainability of Forest Resources	15%			
124	Urban Forestry	6%			
125	Agroforestry	3%			
131	Alternative Uses of Land	10%			
135	Aquatic and Terrestrial Wildlife	27%			
605	Natural Resource and Environmental Economics	4%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	25.0	0.0	0.0	0.0
Actual	24.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
495763	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
495763	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
5112848	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

WSU Extension works with the people of Washington State to address agricultural, natural resource, and environmental issues by providing information, education, technical assistance, and local development programs. Our programs are available to all without discrimination.

WSU Extension will address this goal directly through educational programs, demonstration activities, and facilitation processes.Training programs for faculty, staff, volunteers and appropriate partner organizations as well as for specific clientele groups, the general public and underserved populations will be conducted.Educational programs will address the following issues/needs:
• Developing more profitable income-generating natural resource-based enterprises. •Sustaining and enhancing water availability, both in quality and quantity. •Managing for the recovery and sustainability of anadromous fish. •Improving stewardship of forest and rangeland health, water quality, wildlife habitat, and reducing soil erosion. •Controlling non-native, invasive species. •Decreasing rates of land conversion, ecosystem fragmentation, and land ownership fragmentation. •Effectively engaging interest groups and stakeholders to address forest, rangeland, and environmental issues. •Enhancing the quality of life through urban and community horticulture/forestry.

Other outreach techniques will include field demonstrations, mass media (such as web pages, video streams, newspapers and newsletters), workshops and meetings.Trained volunteers will support programming efforts.

2. Brief description of the target audience

Forest, rangeland, shoreline, and related renewable natural resource owners and managers; decision makers; interest groups; home owners; general public; and youth.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	15000	30000	3000	0
Actual	212135	596555	14312	21431

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

Patent Applications Submitted

Year: 2010
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	6	0	
Actual	20	0	20

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of educational events (resulting in direct and indirect contacts) conducted to increase awareness among citizens and landowners.

Year	Target	Actual
2010	300	985

Output #2

Output Measure

- Number of contacts with diverse, underserved and limited resource stakeholders within the state resulting in increased knowledge about natural resources practices.

Year	Target	Actual
2010	6500	87114

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of acres (public or private) on which forest or rangeland management was improved as a result of Extension programming or due to partnerships between Extension and other agencies and organizations.
2	Estimated dollars saved or earned by forest, range, fish and wildlife-based income generating enterprises resulting from Extension programming and/or partnerships between Extension and other organizations and agencies.
3	Percentage of program participants that report learning new techniques that may lead to improvement in terrestrial and aquatic habitats, enhanced forest and rangeland stewardship, more effective public policy, control of invasive species, reduced ecosystem fragmentation, and/or increased economic opportunities for natural resource-based industries.
4	Percentage of program participants that apply at least one new technique that may lead to improvement in terrestrial and aquatic habitats, enhanced forest and rangeland stewardship, more effective public policy, control of invasive species, reduced ecosystem fragmentation, and/or increased economic opportunities for natural resource-based industries.

Outcome #1

1. Outcome Measures

Number of acres (public or private) on which forest or rangeland management was improved as a result of Extension programming or due to partnerships between Extension and other agencies and organizations.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	40000	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Natural Resources are critical to the economy and environment of the Pacific Northwest. In addition, these resources are central to the overall quality of life of residents of the region. Additionally, these resources are important carbon sinks providing mechanisms for sequestration of the atmospheric carbon dioxide that if left unchecked will contribute to global warming. However, the natural resource base of the state is under constant threat from overuse, fire, invasive species, erosion, and a myriad of other challenges. WSU Extension programs are designed to specifically improve management of the lands, waterways and coastal regions of the state. Successful programs result in protection of the land, air, and water resources.

What has been done
WSU Extension professionals design and deliver programs that lead to specific and measurable changes in management practices on land and water resources of the state. This includes direct remediation of invasive plant species, training landowners how to improve management of forest resources and protect land and dwellings from catastrophic wildfires, and working with landowners and agency personnel directly to restore riparian zones and coastal regions.

Results
WSU Extension programs reached 2,882 landowners and managers that indicated increased knowledge of forest stewardship practices, and 2,190 landowners and managers indicated they have implemented at least one new practice on their land. 486,115 acres were directly impacted by Extension programs. Program participants estimate execution of practices on 10 percent of their ownership, with a cost earnings or savings estimate of $26,406,000. As a result of implementing forest stewardship and health practices, air and water quality has been protected by

reducing wildfire risk and run-off of sediments into streams and lakes and public health threats due to smoke inhalation has been curtailed from these family forests.

In Eastern Washington, 87 family forest plans were completed, leveraging the expertise of 16 volunteer professional foresters to work one-on-one with landowners to provide on-site management recommendations and certification, totaling 22,140 acres. Certification provides market access, landowner recognition, and value-added potential for the sale of wood products.

In Snohomish County, 52% of class participants enrolled in Current Use Taxation programs within a year of taking the course, saving $2,500 per year on average in forest taxes. Additionally, 13 percent generated an average of $1,233 per person in forest products revenue and 10 percent secured an average of $3,281 in new cost share funds using knowledge gained from the class. Quality of life improvement is suggested by the 94 percent of respondents who reported an increased enjoyment of their land and 97 percent reporting that they feel better equipped to successfully steward their land.

Field days evaluations demonstrated that 92 percent of participants actually changed behavior and implemented new stewardship practices within one year based on follow-up evaluations. This resulted in the improvement of 26 percent of total represented acreage with activities such as habitat enhancement, invasive species control, fire risk reduction, and tree planting.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
121	Management of Range Resources
123	Management and Sustainability of Forest Resources
605	Natural Resource and Environmental Economics

Outcome #2

1. Outcome Measures

Estimated dollars saved or earned by forest, range, fish and wildlife-based income generating enterprises resulting from Extension programming and/or partnerships between Extension and other organizations and agencies.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual

2010	2500000	8122456

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Natural resources are major economic engines for Washington State. However, these resources must be management to ensure sustainable production and to support multiple uses including forestry, grazing, recreation, and collection of foods. WSU Extension programs are designed to train natural resource managers to effectively conserve natural resources while concurrently providing jobs and income to the state.

What has been done
Numerous natural resource based programs are conducted annually by WSU Extension professionals. This includes programs such as Coached Forest Stewardship, Integrated Weed Control, training for forest product harvesters, Sustainable Landscapes, and the Climate Friendly Farming research and demonstration project. These programs employ various methods to educate landowners and resource managers how to balance economic returns with the need to sustain the resource base.

Results
As a result of the Forest Stewardship Coached Planning Program, 52% of class participants representing over 18,000 acres of forest lands, enrolled in Current Use Taxation programs within a year of taking the course, saving $2,500 per year on average in forest taxes.
Invasive species, including purple loosestrife, yellow starthistle, St. Johnswort, diffuse knotweed, spotted knapweed and Dalmatian toadflax, once threatened over one million acres of rangeland and was spreading exponentially. WSU Extension provided 353 biocontrol agent releases to land managers that released over 229,470 insects and mites (17 species) to control 12 weed species. Releases were made in 35 of 39 counties serving private landowners, industry, conservation groups, county, state and federal agencies, and tribes. Alternative control using herbicides would have cost over $6 million and many sensitive areas could not be sprayed.
1765 acres were treated with biocontrol agents at an estimated average cost of a single release of approximately $500. Using these calculations, land managers received an estimated $176,500 in biocontrol agents releases. These releases have led to a decrease in the amount of herbicide usage and unmanaged weed problems.

4. Associated Knowledge Areas

KA Code	Knowledge Area
121	Management of Range Resources
123	Management and Sustainability of Forest Resources
124	Urban Forestry
125	Agroforestry
605	Natural Resource and Environmental Economics

Outcome #3

1. Outcome Measures

Percentage of program participants that report learning new techniques that may lead to improvement in terrestrial and aquatic habitats, enhanced forest and rangeland stewardship, more effective public policy, control of invasive species, reduced ecosystem fragmentation, and/or increased economic opportunities for natural resource-based industries.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	85	87

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Natural resource managers and land owners are critical audiences that must be effectively engaged to facilitate the ultimate landscape-wide impacts that WSU Extension strives to achieve. The first step in the process is to ensure that participants acquire new skills and clearly understand how to effectively apply these skills. Learning assessment is therefore incorporated into virtually all natural resource based programming.

What has been done
A broad array of programs were designed and delivered to targeted audiences across the state. Topics include enhancing the health of Puget Sound, developing sustainable landscapes, forest stewardship, youth education, community horticulture, watershed management, and Master Gardener volunteer training.

Results
?At a Family Foresters Workshop, 62 professionals gained knowledge of forest methodology, economics and scientific research, protecting over 4,507 acres of forestland.

?84 landowners and natural resource professionals controlling 4.4 million acres of private and public land engaged in field-based demonstrations for fuel reduction, regeneration systems, and utilization of forest biomass. Three facilities within 50 miles of the major forestland holdings are paying landowners and public agencies for the material, and the Dayton School District has completed the feasibility study to construct a boiler system for heating the school, which is expected to be completely paid off within seven years. Agency commitments for material contribution to biomass users have been improved. Increased thinning on state, federal, and private land has led to improved forest health and habitat, and reduced wildfire hazard risk.

-816 family forest owners and natural resource professionals controlling 35,904 acres attended one of three Forest Owner Field Day?s hosted by WSU Extension, in cooperation with Oregon State University Extension Service, University of Idaho Extension, and other partners. These field days increased awareness of fundamental forest management techniques and emerging issues, as well as united participants with products and services to help them achieve their personal management objectives.

?The class of 2010 Beach Watchers experienced a 12 percent increase in understanding about Puget Sound issues and processes based on the results of pre and post tests given at the start and the end of the 100-hour WSU Beach Watcher training.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
121	Management of Range Resources
123	Management and Sustainability of Forest Resources
135	Aquatic and Terrestrial Wildlife
605	Natural Resource and Environmental Economics

Outcome #4

1. Outcome Measures

Percentage of program participants that apply at least one new technique that may lead to improvement in terrestrial and aquatic habitats, enhanced forest and rangeland stewardship, more effective public policy, control of invasive species, reduced ecosystem fragmentation, and/or increased economic opportunities for natural resource-based industries.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	40	84

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Appropriate application of land and water management techniques is necessary to realize improvements in land and water resources. Once training occurs, it is generally incumbent upon

the land owner or natural resource managers to make changes in their methods to enhance the resource base.

What has been done
A broad array of programs were designed and delivered to targeted audiences across the state. Topics include enhancing the health of Puget Sound, developing sustainable landscapes, forest stewardship, youth education, community horticulture, watershed management, and Master Gardener volunteer training.

Results
Over 70 percent of a training course on building rain gardens indicated that they used information from a previous years? class to modify their home or business. 100 percent of participants have started or completed changes to their landscapes such as stabilizing eroding slopes, replacing a high-maintenance lawn with plants and mulch, adding retaining walls to control erosion, modifying existing beds to increase water infiltration, using native plants or other site appropriate plants, and digging a drainage ditch to divert runoff. Three rain gardens were built as a direct result of this program.

The Living on the Land program graduated 31 people owning 184 acres in 2010. Since 2003, participants implemented 445 best management practices on at least 2116 acres affecting at least 1007 livestock, excluding poultry, and shared what they learned with over 2,331 other people.

After four Shore Steward Shoreline Workshops were completed, 51 percent of the attendees completed an evaluation and 85 percent of indicated that would change at least one practice on their property, based on what they had learned. The highest intended practices dealt with maintaining properly operating home septic systems, surface water runoff from private property, and installing native plants on their property.

Based on evaluations sent to attendees one year after attending training, 68 percent reported they had changed their gardening practices to incorporate information they learned in class; 75 percent reported growing their own fruits and vegetables; 59 percent reported gaining a better sense of physical well-being and mental health from gardening.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
121	Management of Range Resources
123	Management and Sustainability of Forest Resources
131	Alternative Uses of Land
135	Aquatic and Terrestrial Wildlife
605	Natural Resource and Environmental Economics

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}