

2008 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 a statewide and university wide outreach and engagement enterprise of WSU. Through our network of offices in every county, research and extension centers and units, four university campuses, and other facilities, we connect the university to virtually every community in the state. At the beginning of 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
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 ongoing commitment to expanding the economy, improving the quality of life and enhancing the environment of Washington State. Both the 2008 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:2008	Extension		Research	
	1862	1890	1862	1890
Plan	158.0	0.0	0.0	0.0
Actual	212.4	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
- External Non-University Panel
- Expert Peer Review

2. Brief Explanation

Five mechanisms were used to solicit merit and/or peer review for programs conducted by WSU Extension 2008.

- WSU Extension is an active participant in a university wide accreditation review conducted by the Northwest Commission on Colleges and Universities. This process was initiated in 2007 and will culminate in spring of 2009. As part of this process, WSU Extension submitted a college level report to the Commission. This report can be viewed at <http://ext.wsu.edu/documents/SelfStudy.pdf>. WSU Extension will be evaluated as a critical component of the Land Grant University in this process. Our report has been vetted with WSU Administration including the Provost, and it will be submitted to the Commission for further review.

- A comprehensive review of WSU Extension programs was initiated in late 2007 and is continuing through mid-2008. This was conducted as a system wide review of all academic areas (of which WSU Extension is one). This review required an in depth self study of 21 different extension program areas. In addition, each academic department submitted a self study that included their extension components along with teaching and learning and research and scholarship. All self studies were submitted to the Associate Vice President and Dean, WSU Extension for review and recommendations. Her recommendations along with all supporting data and self studies were then reviewed by a university wide committee composed of faculty and administrators. Recommendations from the committee have been submitted to the Provost. The Provost will then make decisions on changes, augmentation, reductions and elimination of programs on the basis of merit, centrality, demand, and productivity.

- WSU Extension shared both its Plan of Work and Report of Accomplishments with Oregon State University and University of Idaho extension leadership and solicited feedback and suggestions for improvements.

- WSU Extension's Plan of Work and Report of Accomplishments are shared with the senior leadership of Washington State University.

- Budgetary reductions have also required that all WSU Extension program be prioritized. Programs of the lowest priority will be subject to potential elimination as we enter the 2009-2011 biennium. Planning for program reduction and elimination began in late 2008 and continues. Results of the process will likely be communicated by university leadership in spring of 2009.

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. 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 Vice President and 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

Stakeholder identification is generally a sequential process. First we seek to identify emerging needs within communities. This is often initiated through searches of the literature and review of demographic (census) data followed by in depth discussions with local decision makers and others with unique knowledge about emerging needs. Once groups are broadly defined, care is taken to understand most effective mechanisms of engagement. If language or culture may create barriers, this 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. 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. In addition, 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.

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. Formal processes include the many local and statewide advisory committees that are created and maintained specifically for the purpose of garnering stakeholder input. These formal advisory structures include the statewide 'Friends of Extension,' the College of Agricultural, Human and Natural Resource Sciences advisory committee, the Center for Sustaining Agriculture and Natural Resources advisory committee, statewide and local Master Gardener organizations, 4-H 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. Our faculty and staff are members of many key organizations at local, statewide and national levels. These connections are extremely valuable in understanding initiatives, opportunities for partnerships, and potential need. Surveys are frequently used to garner input about the effectiveness of individual programs. 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. We also seek broad stakeholder input by announcing candidate presentations and by encouraging stakeholders to participate.

3. A statement of how the input was 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

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. Stakeholder input has also been critical to the development of long-range plans including staffing, facilities investments, and in developing funding proposals.

Brief Explanation of what you learned from your Stakeholders

During 2008, stakeholder input was sought to help develop two important legislative initiatives. Local government, state agencies (including the Puget Sound Partnership), and partners at the University of Washington were engaged to develop the WSU/UW Sound Partnership proposal designed to build upon the WSU Extension Beach Watchers program to engage volunteers and citizens of the Puget Sound region to address critical environmental issues in the Sound and in watersheds feeding the Sound. Additionally, both internal WSU stakeholders and external stakeholders were engaged to develop the WSU Clean Tech proposal. This was submitted to the WA State Legislature as one of WSU's main initiatives as a joint WSU Extension / College of Engineering and Architecture proposal. Stakeholders included the leadership of the College of Engineering and Architecture; the Washington Clean Tech Alliance; the Washington Department of Community, Trade, and Economic Development; and numerous other key influencers. In both cases, stakeholders helped us craft the proposals, identify opportunities and weaknesses in the proposals, and create public support for the concepts.

During 2008, we also began a process that will ultimately lead to categorization of programs from highest priority to lowest priority. Stakeholder input was used to help us understand who benefits from these programs and the extent that local stakeholders and decision-makers value each program offering.

In 2008, county governments began prioritizing their expenditures in lieu of potential budgetary shortfalls. It was very important for us to engage local stakeholders to help us tell county commissioners and other local decision-makers about the value of Extension program in their communities. These efforts were highly effective and county support for WSU Extension remains strong.

At the programmatic level, we use information from stakeholder to enhance designs of educational programs and media. For example, we are currently engaged in a major revision of our web presence. We have received considerable actionable input from agricultural groups about the structure and presentation of educational content. We have also engaged key organizations in development of online educational offerings including a viticulture and enology certificate program, a new online Master Gardener curriculum, and in the planning process for programs currently under development. Stakeholder feedback has helped us understand learning needs and styles. Engaging with internal stakeholders has helped us align our web architecture with current and future content 'reservoirs.'

We also engage stakeholders to help us ensure that publications and videos are culturally appropriate. When materials are developed in non-English languages, we routinely vet them with individuals in the targeted communities to ensure that appropriate terminology and sensitivity is applied.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
3768915	0	0	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	3768915	0	0	0
Actual Matching	3768915	0	0	0
Actual All Other	24531299	0	0	0
Total Actual Expended	32069129	0	0	0

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

V. Planned Program Table of Content

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

Program #1

V(A). Planned Program (Summary)

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: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	32.0	0.0	0.0	0.0
Actual	28.8	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
695616	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
695616	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
4074747	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

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	23000	5000	200	0
2008	19254	80875	1311	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	2	0	
2008	4	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
2008	7	9

Output #2

Output Measure

- Number of contacts with minority stakeholders within the state.

Year	Target	Actual
2008	5000	5600

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.
4	Number of Extension educators creating, implementing and evaluating culturally competent programs to increase the diversity of Extension program participants and partners.

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
2008	60	82

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Strong leadership remains key to organizational, community and local government success. With retirement of the bulk of the 'baby boomers' looming on the horizon, training the next generation of local leaders is more important than ever. Leaders retiring or getting close to retirement in non-profits and governmental entities is increasingly evident. At the same time, the turnover of local government officials in Washington remains very high.

What has been done

WSU Extension has a long history of local leadership training, and in 2008, leadership training was conducted through a number of Extension entities. These included: the Division of Governmental Studies and Services that supports the Natural Resources Leadership Academy aimed at state agency resource managers; the Horizon Project, aimed at poverty reduction in small communities that uses the PEW Foundation LeadershipPlenty approach; Leadership Skagit, a 9-month cohort program for business professionals; a new south Puget Sound Intertribal Leadership Program. All of these programs have a rigorous and comprehensive curriculum. The aim is to provide an intensive experience for the existing and next generation decision-makers rather than trying to reach large numbers.

Results

Extension leadership programs positively impacted almost half of the counties in the state, six tribes, over a dozen communities, multiple non-profits and community organizations enhancing leadership skills and the abilities of individuals, organizations and government to address the needs of the people of Washington State.

In 2008, after completing and participating in the Horizons program, 7 participants ran for an elected office with all but one being elected. Of those elected, 2 are current county commissioners, 3 serve in their respective communities as city council members, and in the community of Sprague, a Horizons participant was elected Mayor. Additionally, approximately 74% of those individuals who participate in Leadership Skagit serve in a leadership role, usually within their community.

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
2008	90	91

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

The goal of all WSU Extension leadership programs is two fold: a gain in leadership skills, and having these skills put to work to better the 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 all of their programs. This often takes the form of session and program evaluation to gauge training quality and knowledge gain. In addition the leadership programs funded through private foundations include formative and/or summative evaluations of program effectiveness. In 2007, the Horizon Project's and its LeadershipPlenty activities were evaluated by a third party set of consultants funded by the Northwest Area Foundation; the Intertribal Leadership Academy (a south Puget Sound tribal program) was internally evaluated with support from the Bill & Melinda Gates Foundation.

Results

Ninety-one percent of individuals completing leadership training indicated increased knowledge in critical leadership areas. Among these individuals, 82% now serve in a leadership role in a community, county, or state agency, in government, or in non-profit organizations.

4. Associated Knowledge Areas

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

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
2008	90	98

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Public policy issues in the Northwest are more complex and numerous than ever. Moreover, conflicts among stakeholders on how to 'best' resolve these problems are becoming increasingly intense and polarized in nature. The conflicts most commonly result in lengthy expensive litigation that produce poor and unsustainable outcomes.

What has been done

WSU Extension programs focus on assisting local, state, federal, and tribal governments (and their agencies) to do their work in an informed and effective manner. Assistance takes the forms of applied research, process facilitation, collaborative problem solving and training. Program faculty and staff do the majority of their work through the WSU Extension and College of Liberal Arts' Division of Governmental Studies and Services (DGSS), and the WSU Extension office of the William D. Ruckelshaus Center, a joint endeavor with the UW. Additionally, a number of county-based Extension activities are undertaken each year.

Results

WSU Extension faculty have worked on critical societal issues such as: homeland security, endangered species, climate change, effective local law enforcement, natural resources management, agricultural vitality, patient care, workers compensation, local government management and citizen engagement. In doing this work, the faculty have engaged with: the Governor's office; state legislators; federal, tribal, state and local officials and agency managers; law enforcement officials; environmental, agricultural and 'better government' organizations; private foundations and numerous non-profits. These officials have indicated behavior changes including a greater willingness to work collaboratively to resolve critical issues. Additionally, these leaders rely more heavily upon research results to guide decisions that address local and statewide issues.

Through the Division of Governmental Studies and Services, one dozen training programs were provided in 2008. Evaluations came back overwhelmingly positive. In addition, the work of the Ruckelshaus Center relies on cooperative methodologies. All involved parties are required to work collaboratively towards a common goal. Additionally, the Ruckelshaus Center requires 100% participation and collaboration for involvement.

4. Associated Knowledge Areas

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

Outcome #4

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	75	107

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Washington is a very culturally diverse state and is home to 30 plus Native American tribes. Washington is also being Asia's gateway to the USA. The first wave of immigrants were the Chinese who came to build railroads, followed by the Japanese who developed the state's truck farming industry and were later followed by ethnic groups from southeast Asia after the Viet Nam conflict. Many communities on the eastside of the Cascade Range are populated by the descendents of Russian speaking areas. Establishment of orchard farming brought Mexican farm workers and the fall of the Communist eastern block brought an influx of Ukrainians. All of have settled in Washington to make new life for themselves and their families.

What has been done

Currently, the Latino population is the fastest growing segment of Washington's society. WSU has undertaken a number of initiatives to develop culturally competent programs to serve this population and other ethnic groups. These consist of: five Full Immersion/Spanish Institutes across the state; an Intertribal Leadership Academy in the south Puget Sound; the hiring of a Hispanic Community Development Specialist; the tailoring of the Horizon Project efforts in central Washington to work with Latino communities. There is also professional development training for Extension educators titled 'Navigating Difference: Cultural Competency Training.'

Results

- 200 participants completed the Full Immersion Spanish Institute programs in 2008. The participants include school teachers, people from law enforcement, social service employees, health care providers and some of our own extension faculty.
- The Intertribal Leadership Academy graduated a cohort of 16 tribal members
- The Horizon Project undertook poverty reduction work in 3 Latino and 1 tribal communities in 2008.
- The 'Navigating Difference: Cultural Competency Training,' was an 18 hour training program that drew 32 participants.

4. Associated Knowledge Areas

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

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

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

Key Items of Evaluation

Program #2

V(A). Planned Program (Summary)

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: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	25.0	0.0	0.0	0.0
Actual	51.1	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
724846	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
724846	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
5916846	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

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.

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.

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

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	50000	100000	25000	0
2008	91460	73793	98634	36726

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

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	2	0	
2008	3	4	7

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
2008	50	43

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 hand washing 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
2008	40	47

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

The analysis of interventions that effectively address the epidemic of childhood obesity clearly identify that successful programs target multiple factors that affect healthy weight, including diet quality, levels of physical activity and family involvement (Stice, Shaw, & Marti, 2006). Programs that can document positive change across these domains are more likely to produce sustainable changes in healthy weight for children and adolescents.

Stice, E., Shaw, H. & Marti, C.N. (2006). A meta-analytic review of obesity prevention programs for children and adolescents: The skinny on interventions that work. *Psychological Bulletin*, v. 132, 667-691.

What has been done

The SNAP-Ed program in Washington State (Food \$ense) reaches large numbers of youth in partnership with public schools. Curriculum content and outcome measures include both nutritional quality and physical activity. Parent newsletters and family nights are methods utilized to engage families of the children reached in order to reinforce and transfer pre-post Food \$ense evaluations after participating in a series of lessons ranging from 5 to 10+ (sample sizes ranged from 2,474 to 16,908 depending on outcome measure). A parent newsletter evaluation survey generated feedback from a sample of 6,058 parents and guardians.

Results

Youth reported behavior changes in the following areas of dietary quality: eating fruits and vegetables daily (68 percent); increased willingness to taste new foods (93 percent); and using labels to compare nutritional content of foods (64 percent). Sixty-nine percent of youth also reported increased levels of physical activity after participating in Food \$ense. Based on the parent survey, 72 percent of families reported buying healthier snacks and reading nutrition labels. Eighty one percent reported higher levels of physical activity and 75 percent increased consumption of fruits and vegetables.

4. Associated Knowledge Areas

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

Outcome #2**1. Outcome Measures**

Percentage of participants reporting improved hand washing practices

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	25	52

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Foodborne illness is a serious public health concern, and outbreaks are often tied to retail facilities selling or serving food to consumers. In 2007, Washington State had 43 foodborne outbreaks reported, affecting a total of 722 people. In the previous year, 71 percent of outbreaks involved restaurant settings. Food workers with illnesses and bare-handed contact with retail foods are consistently the top factors contributing to foodborne illness outbreaks in Washington State.

What has been done

Extension offers food safety courses for both Food Worker Cards and Person In Charge (PIC) trainings in collaboration with local health departments. In 2008, over 13,000 retail food workers were reached in four counties in southwest Washington with classes being offered on a monthly basis. The curriculum for the PIC training has also been translated into Spanish and classes are offered quarterly to Latino food handlers.

Results

Sixty percent of Food Worker course participants completed exit surveys. Food handling practices they planned to change included: washing hands the right way and at the right time (46 percent); eliminating bare hand contact with ready-to-eat foods (45 percent); and not working with food when sick (45 percent). For the PIC training, a follow-up evaluation documented that 60 percent of facilities improved hand washing procedures of food workers after training. Fifty-two percent also reported using gloves and utensils to prohibit bare hands from touching ready-to-eat foods post-training. An analysis of changes in inspection scores for facilities that sent staff to PIC training in 2006-2007 also documented that 45 percent of facilities reduced red violation scores (the most hazardous practices related to foodborne illness) by 50 percent or better.

4. Associated Knowledge Areas

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

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**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

* Sixty percent of Food Worker course participants completed exit surveys. Food handling practices they planned to change included: washing hands the right way and at the right time (46 percent); eliminating bare hand contact with ready-to-eat foods (45 percent); and not working with food when sick (45 percent).

* Follow-up evaluation documented that 60 percent of facilities improved hand washing procedures of food workers after training. Fifty-two percent also reported using gloves and utensils to prohibit bare hands from touching ready-to-eat foods post-training. An analysis of changes in inspection scores for facilities that sent staff to PIC training in 2006-2007 also documented that 45 percent of facilities reduced red violation scores (the most hazardous practices related to foodborne illness) by 50 percent or better.

Key Items of Evaluation

Program is creating significant reductions in behaviors that may lead to transmission of food-borne illnesses.

Program #3

V(A). Planned Program (Summary)

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	30%			
213	Weeds Affecting Plants	10%			
216	Integrated Pest Management Systems	20%			
307	Animal Management Systems	10%			
601	Economics of Agricultural Production and Farm Management	10%			
Total		100%			

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	50.0	0.0	0.0	0.0
Actual	58.2	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 1125164	1890 Extension 0	Hatch 0	Evans-Allen 0
1862 Matching 1125164	1890 Matching 0	1862 Matching 0	1890 Matching 0
1862 All Other 8748853	1890 All Other 0	1862 All Other 0	1890 All Other 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 addressed 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 were conducted. Educational programs addressed 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 include field demonstrations, mass media (such as web pages, video streams, newspapers and newsletters), workshops and meetings. Trained volunteers 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

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	50000	100000	25000	0
2008	81440	393000	103002	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	2

Patents listed

Extension faculty member, Craig MacConnell, has filed two patent applications for amended digested dairy solids. This product holds great promise for replacing peat moss for the container plant industry. Converting the container plant industry way form using peat moss would allow peat bogs (major carbon sinks) to remain intact and reduce release of greenhouse gases in to the environment. Additionally, this provides a potential income stream for dairy producers making it more viable to undertake the expense of adding anaerobic digesters on-farm.

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	20	0	
2008	49	0	0

V(F). State Defined Outputs**Output Target****Output #1****Output Measure**

- Number of integrated research and extension programs fostered for intrastate, interstate and international impacts.

Year	Target	Actual
2008	11	19

Output #2**Output Measure**

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

Year	Target	Actual
2008	11000	13089

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O No.	OUTCOME NAME
1	Percentage of educational activity attendees that increased their knowledge about practices that can enhance agricultural profitability and competitiveness.
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 Extension faculty and staff creating, implementing and evaluating culturally competent programs to increase the diversity of Extension program participants and partners.
7	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.
8	Estimated reduction dollars spent for chemical pesticides among farms utilizing integrated pest management strategies.

Outcome #1**1. Outcome Measures**

Percentage of educational activity attendees that increased their knowledge about practices that can enhance agricultural profitability and competitiveness.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	75	80

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Washington's agriculture is highly dependent upon international trade and external domestic markets. Therefore, it is necessary for producers to continuously learn new techniques and technologies in order to remain competitive.

What has been done

Numerous educational programs were conducted to improve producer understanding about new production techniques, resources and technologies. These include face-to-face, online, and indirect program delivery methods (publications, volunteer-based program delivery, etc.). During 2008, over 81,000 adults were directly contacted by WSU personnel with educational programming designed to improve profitability and competitiveness. Additionally, almost 400,000 contacts were made through indirect methods.

Results

Assessment of learning was conducted in many of the educational forums conducted across the state. The following is a sampling of the results of these assessments.

- * Participants in Value-added Meat Products training increased their general understanding of production techniques by 1.25 units on a five-point scale. Additionally, 94% indicated that they would implement at least one practice change based on knowledge gained from the program.
- * Attendees at PNW Vegetable Disease Diagnosis workshops increased their knowledge from 4.1 to 5.5 on a 7.0 scale (34%). Respondents indicated that they would communicate more effectively with field staff (13% of respondents), use reference materials more effectively (13%), use more systematic approaches to diagnosis (9%), and not jump to conclusions too quickly (9%).
- * 87% of respondents indicated that their awareness of high residue farming (HRF) had increased since 2004 and 80% had adopted at least one HRF technique in the last four years.
- * Over 75% of participants in the Sustainable Small Farm and Ranch Overview class stated that their understanding about sustainable crop production, animal production or marketing techniques had increased.
- * Over 70% of participants in small grain variety trial tours included recommended varieties in their production schemes.
- * Participants in wheat marketing workshops indicated that their knowledge about forward pricing increased by 85%.
- * More than 200 program participants in small farms educational programming in Walla Walla County increased their knowledge by 86% in small ruminant health, marketing and management. Additionally, 71% reported reduced expenditures and improved herd health as a result of knowledge gained.
- * Among 269 youth participants at Quality Assurance and Carcass Evaluation programs, 66% became Pork Quality Assurance (PQA) certified.
- * Among participants in a Cultivating Success program in Spokane County, all indicated that they had learned the requirements for organic certification, 90% gained a working understanding of organic pest control and organic fertilizers, and 80% learned how to create buffer zones to protect surface water.
- * Among participants in the WSU Tree Fruit School on Pest Management, a significant improvement was seen in all 20 questions asked about pests, pesticides, and regulations. 98% indicated that they were not currently following standard recommendations for trapping, sampling and monitoring. All indicated that they would make changes and incorporate best management practices.
- * As a result of a special Cultivating Success series designed specifically for Hmong farmers, seven farmers met requirements to successfully graduate from the course.
- * 86% of participants in the Cultivating Success program in Stevens County increased their understanding about agency, university, and community resources supporting agricultural entrepreneurship. 81% that they were prepared or highly prepared to evaluate farm, market and human resources. 73% indicated that they were prepared to develop a whole farm management plan.

4. Associated Knowledge Areas

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

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
2008	25	45

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The ability to manage risk is central to profitable production in the Pacific Northwest. Decisions about when and how to market agricultural produce, about timing and selection of inputs, and about adjustment in management based on changing environmental conditions are crucial to success in the region. Additionally, farmers must be able to quickly adjust to changes in policies and/or changes in consumer preference to ensure their success.

What has been done

In cooperation with the Western Center for Risk Management Education, commodity organizations, and other partners; WSU Extension professionals conduct educational programs, applied research and demonstrations designed to help farmers manage under dynamic pricing of agricultural produce and farm inputs. Additionally, programming reaches out to farmers to help them better understand how to effectively leverage changes in policy and public demand and perceptions.

Results

As a result of WSU Extension programming designed to enhance understanding and application of techniques leading to improved risk management.....

* Among farm families attending farm succession planning workshops, 206 indicated improved intergenerational communication, 33 developed transitional planning goals, and 10 completed a full succession plan.

* Hundreds of thousands of visits occur annually to the Ag Weather Net site - designed to provide farmers with up to date weather predictions that are used to plan planting and application of inputs. When connected with additional resources such as the WSU Decision Aid Support system (DAS) this resource (AWN) results in more targeted and effective application of pesticides leading to more effective control with less material. Survey responses suggest that this resource saves producers over \$7 million annually.

* Over 70% of growers attending small grains research tours indicate that they will select new disease and insect resistant varieties based on knowledge gained.

* Among 55 growers attending wheat marketing workshops, 85% report increased knowledge of forward marketing strategies.

* After attending workshops and demonstrations related to conservation tillage, 93% of survey respondents indicate that they have adopted some form of high residue farming techniques and benefited from application of these techniques through savings in fuel, labor, and irrigation costs.

4. Associated Knowledge Areas

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

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
2008	55	60

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Washington State's landscape, climates, and population centers provide significant opportunities for agricultural producers to expand their revenue streams through value-added processing, crop diversification, or through agri-tourism enterprises.

What has been done

Educational events coupled with demonstration and applied research provided Washington residents opportunities to learn about new cropping systems and avenues for increasing the value of their produce. This includes direct entrepreneurial training through programs such as Cultivating Success - a joint WSU/University of Idaho program, cropping diversification research and demonstration, and numerous other programs.

Results

* As a result of educational programming at the Puyallup Research and Extension Center, 52% of participants indicated that they planned to change farm practices to include diverse enterprises such as poultry production, on-farm composting, and cover cropping.

* WSU Extension faculty evaluate application of organic production techniques statewide. Major increases in organic apple production were projected by 2008. Concurrently concerns were expressed about over supplying and outstripping demand. Unfortunately these projections were accurate as was the saturation of demand.

* A shift to less toxic production methods controlling cherry pests has resulted in sharp reduction in organo-phosphate usage and reduced cost to producers of \$2.5 million in 2008.

* On-farm anaerobic digesters have been established on dairy farms as direct result of WSU Extension programming (Climate Friendly Farming). This has led to reduction in animal and food product waste and creation of 2.8 MW of electrical generation capacity in WA and 10.6 MW of electrical production in the Pacific NW. Additionally, two of these dairies have executed methane emission reduction contracts. To date, these contracts have generated an additional \$250,000 with potential to add over \$1 million to the revenue streams of the WA farms with minimal additional inputs. Analyses conducted by a WSU economist suggest that the total gross revenues generated by anaerobic digesters developed as a result of Climate Friendly Farming is approximately \$10 million annually.

* Food safety programs designed to support the pasture poultry industry have resulted in improved learning scores (increased by 2.3 units).

* 81% of participants in the Cultivating Success program indicate that they are very prepared to evaluate farm, market, and human resources. Additionally, over 500 farm business plans have been created by graduates of the program.

* 25 Latino farmers obtained EQIP contracts, 73 obtained FSA loans, and two received organic certification after participating in Cultivating Success.

* As a result of the WSU Managed Rotational Grazing program, five farmers have begun grazing CRP lands as an additional enterprise and one producer saved \$21/acre in weed control costs.

* As a result of forest-products programming, twelve Latino families marketed over \$250,000 in Christmas greeneries and finished products.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
102	Soil, Plant, Water, Nutrient Relationships
307	Animal Management Systems
205	Plant Management Systems
112	Watershed Protection and 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
2008	85	85

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Interest in organic production methods has increased dramatically in the last few years. Organic production often results in increased cost and additional risk exposure. However, organic production and certification may also lead to new marketing opportunities, reduced environmental impacts, and other benefits. Producers need science-based information to assess these risks and opportunities.

What has been done

Washington State University has developed significant resources to support science-based assessment of organic practices and to help producers determine the benefits and risks of conversion to organic production methods. This includes educational programs, on-farm research, demonstrations, and educational materials.

Results

Information on organic production methodologies has been incorporated into many aspects of agricultural programming conducted by WSU Extension. The following provides examples of knowledge acquisition related to organic production methods.

- * After participating in Cultivating Success, 100% of participants became familiar with organic standards and 90% demonstrated awareness of new organic pest control and fertilizer products.
- * Attendees at Urban Horticulture and Arboriculture programs were surveyed to determine the likelihood of behavior change. On a scale of 1-5 with 1 signifying high likelihood of change and 5 indicating strong resistance to change, participants were very likely to reduce use of phosphate fertilizers and soil amendments while increasing use of organic mulches.
- * After attending workshops at the WSU Puyallup Research and Extension Center, 52% indicated that they were likely to change farm practices to include sustainable and/or organic methods.
- * WSU Extension faculty analyze and report organic trends annually for the state. These data are presented on a web site and are frequently referenced in presentations, in the farm press, and in technical journals.
- * Work by WSU Extension and research faculty has led to registration of six new low-impact pest control products - two are approved for organic production systems.
- * The Climate Friendly Farming project has demonstrated numerous mechanisms for managing dairy and food service waste while increasing revenues for farmers. The annual reduction in methane production on three farms is 70,000 tons of CO2 equivalent per year. While not specifically an organic system, Climate Friendly Farming has created opportunities for agricultural producers to examine and evaluate sustainable practices leading to waste reduction while producing on-farm bioenergy.
- * The WSU Extension Vegetable Horticulture Program develops, tests, and promotes high value organic and sustainable production systems. As a result, new varieties have been released which are suitable for use in organic production systems.
- * As a result of training received from the Cultivating Success series, two new Latino farmers received organic certification.
- * After receiving training in organic gardening techniques, 80% of 35 Master Gardener trainees in Kitsap County reported reduced use of pesticides and 20% indicated that they used no pesticides.
- * To support development of sustainable and organic beef production systems in NW Washington, WSU Extension professionals worked to create a Mobile Meat Processing Unit pilot project. This project has been in place since 2005. In 2008, 1250 animals were processed supporting creation of farm to consumer sales of beef products in NW Washington. In addition to returning value to producers, this system has also generated over \$1 million in gross receipts from meat sales annually.

4. Associated Knowledge Areas

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

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
2008	85	85

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

To effectively coexist with a rapidly growing population, Washington's farmers and ranchers must consider water quality, soil stability, and food and environmental safety in all of their management decisions. In addition, careful stewardship of land and water resources will ensure that these resources are available to future generations of agricultural producers and the general public.

Washington State has not been immune public reaction to food safety and environmental issues. For example, in 1989 60 Minutes publicized the use of Alar - a growth regulator - on apples and linked it to cancer. And in 2003, the first documented case of Bovine Spongiform Encephalopathy (BSE or 'mad cow disease') occurred in Washington State. Both of these issues had worldwide implications, affected the state's exports and reputation, and heightened scrutiny of agriculture by regulators and the general public.

What has been done

WSU Extension supports numerous programs that lead to more responsible stewardship of Washington's land, water, air, and food resources by reducing erosion, improving water quality, enhancing wildlife habitat, and protecting the safety and quality of foods produced in the state.

Concurrently, many of these programs reduce costs to producers improving competitiveness for the state's agricultural industries.

Results

Integrated pest management, conservation tillage, Master Gardener, and animal science programs focus on protection of land, water, and air quality while ensuring the safety and quality of foods produced in the state. Examples of results derived from these programs are listed below.

* As a result of WSU Extension programs, 80% of survey respondents indicated that they had adopted 'high residue farming' techniques in the last past years. Over 56,000 acres in the state are now farmed using high residue farming techniques leading to reduced soil loss and conservation of water within the soil profile.

* Savings to farmers associated was computed based on surveys conducted by the Social and Economic Sciences Research Center at WSU. On average savings associated with high residue farming was almost \$40 per acre. Extrapolated across the state, total savings to farmers exceed \$2.4 million annually.

* Management changes in Washington's Palouse region (recommended by WSU Extension personnel) have led to reductions of soil loss in high precipitation regions from 20 tons/acre/year in 1975 to 5 tons/acre/year in 2005. In medium rainfall areas soil loss decreased from 12 tons/acre/year to 6 tons/acre/year. In low precipitation sites, soil loss decreased from 4 tons/acre/year to only 1½ ton/acre/year.

* Surveys conducted by the WSU Extension IPM program indicated that 83% of pesticide applicators planned to make changes in decontamination processes to protect themselves and others from residues.

* 55% of participants in Sustainable Landscapes workshops indicated that they used less fertilizer and pesticides as a result of the training.

* 75% of potato growers in the Columbia River Basin followed IPM recommendations from the information helpline. This allowed for successful management of potato blight in the region and saved growers 7 fungicide applications in 2007.

* Master Gardener trainees in Spokane County increased their understanding of sustainable gardening methods. When surveyed, 90% indicated that they had begun, increased, or continued to incorporate practices to enhance or sustain natural resources.

* Regional small grain farmers reported 5-30% reductions in nitrogen applications resulting from precision nitrogen application techniques. It is estimated that widespread application of the technique could save farmers \$35 million annually in the region.

* After completing the 8-week Coached Forest Stewardship short course, 80% of participants indicated that they planned to complete a forest management plan within the next 6 months.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
307	Animal Management Systems
112	Watershed Protection and Management
102	Soil, Plant, Water, Nutrient Relationships
216	Integrated Pest Management Systems

Outcome #6

1. Outcome Measures

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

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	25	24

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The population of Washington is increasingly diverse. These demographic changes are most notable regions engaged in high-value agricultural production. Growth in Washington's Latino population has been most dramatic, but there are also many other minority populations that are becoming engaged in farm management and farm ownership. This segment of agriculturists often lack capital, land, and business management experience. Traditional educational and outreach programs may create barriers to learning for these audiences caused by language limitations and/or cultural barriers.

What has been done

WSU Extension has hired bilingual faculty and staff to develop and deliver educational programs in Spanish and other languages. Additional steps have been taken to ensure that educational materials are culturally appropriate. Language and culturally appropriate approaches have also been extended to mass media and multi-media approaches. Finally, programs have been designed that specifically support the aspirations of our diverse clientele. This includes programs that help Latino farm workers transition into land ownership, training on value-added production methods for both Latino and Hmong farmers, and culturally appropriate educational offerings and materials for Tribal members.

Results

Some examples of results generated by programming specifically designed for diverse audiences includes the following:

- * 25 Latino farmers obtained EQIP contracts, 73 obtained FSA loans, 2 obtained Farm Credit Service loans, and 2 received organic certification
- * Two Hmong farms received organic certification, one received an NRCS contract, and one received an FSA loan
- * One Hmong and 23 Latino program participants acquired new farms
- * 80 percent of farm service providers who interacted with minority farmers in a Multicultural Farming Roundtable indicated they enhanced their understanding of multicultural farmers and gained knowledge to assist them
- * All participants in the agricultural interpreter training workshop indicated their willingness to serve as interpreters at future agricultural courses, conferences and farm walks in Washington

4. Associated Knowledge Areas

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

Outcome #7

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
2008	60	87

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

The number of Washington agriculturalists focused on organic food production has increased dramatically in the past ten years. Only recently has this audience become served with meaningful research aimed at resolving issues associated with this form of food production. WSU Extension faculty members have become linked with research counterparts to translate this new information to farmers via educational outreach methodologies.

What has been done

Serving organic farms and ranches as been a focus of the Center for Sustainable Agriculture and Natural Resources (CSANR) and the WSU Extension small farms team. Additionally, a major curriculum entitled 'Cultivating Success' that teaches participants about soil fertility and nutrient management, cover cropping, weed management, and livestock management. Many participants in this program are engaged in transition to organic production methods.

Results

- * 120 farmers, students, and agricultural and agency professionals learned about soil management, cover crop strategies and nutrient management through Cultivating Success classes in 2008
- * 94 percent of field day participants increased their knowledge about farming and 52% indicated that they were likely to change their farm practices as a result of the field day
- * A website to survey organic growers about marketing strategies, information sources, agriculture goals, farming challenges, and farmer & farm characteristics received 1177 hits (1063 visitors) during July-December 2008
- * Organic producers participating in an organic tree fruit website learned of predictions made in 2006 for a major increase in organic apples in 2008, with warnings about overshooting the growth of demand, a fact that occurred.
- * Organic growers have adopted a molasses-based bait for cherry fruit fly control through participation in extension educational
- * An organic farm managed by WSU has created a successful CSA program to educate the public in skills necessary to operate such an enterprise
- * WSU's Vegetable Horticulture Program has introduced new high value crops, including edamame, pea shoots, baby corn, wasabi, icebox watermelon, winter-grown lettuce, fresh shell beans, and dry beans, for use in organic and sustainable small farming
- * Through extension demonstrations, black plastic is being used by more farmers as a non-chemical method for weed control
- * A 'Train the Trainer' program has produced 55 additional volunteer instructors in the Cultivating Success program
- * Over 640 students have taken the Small Farms Team 's agricultural entrepreneurship course that instructs student to create a farm business plan using electronic resources through WSU.
 - 86% of course participants increased their awareness of the availability of agency, university and community resources supporting conventional and organic production methods.
 - 79% increased their understanding of new marketing and alternative production strategies.
 - 80% increased their understanding of goal setting and whole farm planning
 - 81% of students responded that they were very prepared or highly prepared to evaluate farm, market, human and financial resources under varying production methods.
- 73% of students stated they were very prepared or highly prepared to develop a whole farm management plan including organic production options.
- 81% of Agricultural Entrepreneurship respondents said they felt better prepared (from great to high extent) to develop a business plan for a small farm and organic enterprises

4. Associated Knowledge Areas

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

Outcome #8

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
2008	1000000	14200000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many of Washington's 200 plus agricultural commodities are very susceptible to insects and disease. Control of these pests can be expensive and can be potentially harmful to the environment. Integrated Pest Management (IPM) provides effective strategies that allow producers to effectively control pests with the least amount of pesticide application. Because IPM strategies increase the efficiency of pest control strategies, significant savings are realized.

What has been done

IPM programs are delivered to farmers, ranchers and agricultural professionals that support cost effective control of pests in agronomic, horticultural and livestock systems. These involve direct educational programming, publications and educational media, online decision support systems, demonstration and applied research programs.

Results

Examples of savings resulting from WSU Extension IPM programs are listed below:

- * New pesticide registrations (Section 18's and Section 3's) resulted in approval of new reduced risk pesticides (Callisto in particular) for use on a majority of cranberry acres in the Pacific Northwest, resulting in significant increases in yield, reduced crop loss, reduction of total pesticide usage by >300,000 pounds/year, and overall savings to the PNW cranberry industry of >\$1 million/year.
- * Growers that followed management recommendations from the information line (75% of the potato growers in the Columbia Basin) successfully managed late blight at a cost saving due to more efficient use of fungicides (7 fewer applications in 2007), less late blight on foliage in the field and less tube blight in storage than those that did not follow disease management recommendation.
- * By changing time of fungicide application, potato growers reduced the mean number of applications, realizing an annual cost savings of \$7,642,700 and a 10.5 % increase in yield.
- * Growers of cereal crops in the Pacific Northwest who are moving from dependence on spraying of cereal leaf beetle to integrated pest management are realizing cost savings of \$14 per acre.
- * Adoption of integrated pest management for noxious weeds on improved pasture and grassland in northeastern Washington state has saved over \$5.5 million per year in weed control costs for landowners and agencies.
- * Onion producers who treated their cropland with the pre-emergent herbicide Nortron saved \$95-\$100 per acre and reduced standard post-emergent herbicide use by 120,000 pounds annually.
- * Lentil producers who utilized a Section label exemption for Lorox herbicide on 18,000 acres in Washington and Idaho realized an average yield increase of 220 lbs per acre valued at over \$1.1 million in lentils for 2008.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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

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

Key Items of Evaluation

The Climate Friendly Farming program is a major effort supported by WSU Extension, the WSU Agricultural Research Center, and Paul G. Allen Foundation (Microsoft Co-Founder). One critical part of this program centers on development of on-farm energy production facilitated by anaerobic digestion of farm and food wastes. Funding from Mr. Allen's Volcan Corp. supported the development of a commercial digester on a farm in NW Washington used for research and demonstration. WSU Extension professionals and research colleagues evaluated the effectiveness of this strategy, made process improvements, and leveraged the system to demonstrate the effectiveness and cost to other producers. As a result, three additional new digesters have been developed or are under construction in WA State. Additionally, farmers from Idaho and Oregon have begun developing and implementing four digesters based on this technology. A WSU researcher in the School of Economic Sciences has conducted an analysis of the economic impacts of this program. This assessment augmented by additional quantitative data follows:

* Installation costs $\$1250/\text{cow} \times 40,000 \text{ cows} = \50 million in expenditures supporting jobs in the region.

* Total value of electrical generation and other values associated with the operation of 8 new anaerobic digesters = \$10 million annually.

* New electrical generating capacity resulting from 7 anaerobic digesters = 10.6 MW, This is roughly enough electricity to power 10,600 homes.

* Among the new technologies developed as a result of this project is an amended fiber product. Two patents have been submitted on this product which can directly replace peat moss in the container plant industry. Given that peat moss stores one third of global sequestered carbon, this technology could greatly reduce destruction of peat allowing much of the remaining CO₂ to remain sequestered.

Program #4

V(A). Planned Program (Summary)

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: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	26.0	0.0	0.0	0.0
Actual	30.0	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
624687	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
624687	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1468704	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

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	9000	15000	70000	0
2008	24818	358027	118525	55171

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

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	6	0	
2008	9	0	0

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
2008	600	704

Output #2**Output Measure**

- Number of programs delivered that support creation and maintenance of healthy family structures.

Year	Target	Actual
2008	1	12

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O No.	OUTCOME NAME
1	Difference (in percentage points) between 5-year graduation rates of former 4-H youth and the general student population at WSU.
2	Difference (in percentage points) between 4-H youth planning to attend post-secondary institutions after graduation and the general student population.
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.

Outcome #1**1. Outcome Measures**

Difference (in percentage points) between 5-year graduation rates of former 4-H youth and the general student population at WSU.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	5	5

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Academic success for students is essential for their transition to successful adulthood. Parents, community leaders and funders are expressing concern about where the next generation of skilled workers will be found. In addition, college education has a profound effect on economic condition with college graduates earning on average \$900,000 more in their lifetimes.

What has been done

Science, Engineering, and Technology programs are designed to enhance understanding and interest in these key areas. Other 4 H youth development programs focus on skills related to public speaking, critical thinking and life skill attainment. All are designed to improve the lifelong success of these youth.

To validate the impact of these efforts, incoming freshman GPA's were tracked at WSU and compared to the incoming WSU freshman population who self identified as 4 H members.

Results

In 2008 the incoming freshman GPA at WSU was 3.46, the incoming freshman GPA of self identified 4 H members was 3.71 indicating a .27 GPA increase. This statistic would indicate that as a pool 4 H members are stronger students.

4-H Programs at the local and state levels provided over 160 scholarships to graduating high school seniors across Washington. These scholarships totaled over \$80,000 in direct college monies to 4-H members.

Each year WSU recognizes high school students who have been nominated by their schools during their junior year in high school based on a grade point average of 3.80 or higher and at least 1200 on the SAT or 26 on the ACT or 180 on the PSAT. The youth are also judged on leadership, community and extracurricular involvement. 4 H youth continue to excel academically and are superior in their leadership and citizenship skills as documented through the Tufts Study of Positive Youth Development Washington State data.

In Benton-Franklin counties 95% of 4-H Horse Bowl youth have enrolled in college with the majority choosing studies in science, engineering or technology.

4. Associated Knowledge Areas

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

Outcome #2**1. Outcome Measures**

Difference (in percentage points) between 4-H youth planning to attend post-secondary institutions after graduation and the general student population.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	10	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Academic success is critical for social and economic success. 4-H Youth Development programs focus on attainment of positive lifeskills. While academic success is only part of the overall makeup of success indicators, it is one of the most powerful determiners of both economic and social success.

What has been done

Washington State is one of the 16 states participating in the Tufts Study of Positive Youth Development. This is providing preliminary information about student attitudes about education.

Results

In preliminary data of 8th graders 4 H youth have a more positive attitude about school, more positive attitude toward their teachers and higher personal academic expectations.

4. Associated Knowledge Areas

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

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
2008	75	97

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth are tomorrow's leaders but they are clearly capable of leadership today. A young person's engagement in life skill building pays dividends throughout their life span. 4 H YD creates and promotes programs and activities that help young people acquire critical life skills and assist youth in developing a greater sense of connectedness to their communities. Researchers, youth workers and political decision makers recognize that it is both short sighted and expensive to focus our attention entirely on acute problems of youth while ignoring more effective and economically viable preventative measures. When increased emphasis is placed on building the resilience of young people to overcome adversity and more complete, holistic youth development principles are applied young people are better able to make a successful transition to adulthood and reach their fullest potential.

What has been done

A myriad for youth development activities, structures and programs were conducted in 2008 to enhance the life skill development of young people across Washington. Such outreach efforts including after school and out of school time programming for low income and socially disadvantaged youth. Other programs included forestry, watershed, animal science and fisheries education. Educational programs were also conducted in citizenship, healthy living, computer/robotics technology, textile science and basic science. The over arching educational and social objectives are based upon the principles of positive youth development. One particular effort was made in the cluster of lifeskills known as citizenship through our 4 H Know Your Government Conference.

Results

The Washington State University Extension 4 H Youth Development Program has a formal Life Skills Evaluation System that we use to objectively measure pre and post experience life skills of the youth. The amalgamation of statewide activities and events indicates an 87% increase in overall life skill development.

The 4 H Know Your Government Conference reached over 300 youth and adults across Washington with a 2008 theme of the Election Process, the youth who participated in pre/post testing expressed increased capacities to :

- use time wisely; work effectively in groups;
- express clearly and listen effectively;
- self management and ability to apply personal values to choices.

The 4-H Eco-Stewardship Program successfully reduced the negative behaviors of the summer intensive students, and significantly strengthen their decision making, communication and problem solving skills. Classroom teachers of the 4-H Eco-Stewards participants indicated that the students classroom behaviors and academic performance increased due to their field participation.

In Skagit County in NW Washington, the 4-H Latino Outreach Network has begun a community dialog with Latino community leaders acquainting them with the opportunities for youth through the 4-H Program. This dialog resulted in a summer day camp for Hispanic Migrant Youth reaching over 100 migrant children with life skill education.

In rural isolated natural resource based counties youth have limited exposure to the arts and almost no opportunity to participate in them. In 2008, Pacific County 4-H collaborated with Montana State University for the creation of a summer children's theatre program. This outreach effort attracted 40 children for a first-time ever participation in the performance arts.

4. Associated Knowledge Areas

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

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
2008	60	66

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Teens in Washington State are using and abusing alcohol and other drugs at alarming rates. Despite community based education efforts and national social marketing campaigns, teen substance use trends show a decline in use but not elimination. Twenty six percent of high school seniors who completed the Washington State Healthy Youth Survey in 2006 reported that they had drunk heavily within the last two weeks, and 24% had driven a car after drinking or driven with someone who had been drinking. Annual dollar costs of drug and alcohol abuse in Washington were estimated at more than \$2.5 billion in 1996. Economic and behavioral studies of substance abuse costs show that prevention efforts pay off in health and economic terms.

What has been done

The Strengthening Families Program (SFP) for Parents and Youth 10 14 Years is a nationally recognized 'best practice' curriculum with a strong longitudinal research base. Youth whose families attend SFP are significantly less likely to use alcohol, tobacco, marijuana, and methamphetamine years after the program.

Washington State University Extension faculty selected SFP in 1999 as a model for use in Washington and has spearheaded the statewide training, dissemination, and research of the program since that time. We have trained over 650 facilitators from 29 Washington counties and collected evaluation data from 128 programs serving 2660 parents and youth.

Results**Reduction in Substance Use.**

The number of youth who used substances decreased significantly from pretest to posttest. Among youth reporting substance abuse in the pretest, fully 1/3 indicated no substance abuse in the posttest (n reporting on use = 114; Chi Squared = 30.8, $P < .001$). This process uses a standard dichotomous index of substance use that assesses past 30 day use of 7 substances (alcohol, tobacco, marijuana, inhalants, and other illegal drugs). Index items are also used in the Washington Healthy Youth Survey and have been shown to be valid and reliable (Smith, McCarthy & Goldberg, 1995).

Increased Protective Factors.

Family characteristics that promote healthy development of children and youth are termed 'protective factors.' Short term increases in parent report of these protective factors were related to lower levels of adolescent substance use 4 years after the program in the randomized clinical trial of SFP (Spath, Redmond, & Shin, 1998). Latino, Native American, and White rents/caregivers all reported statistically significant improvement from pretest to posttest in the four family protective factors targeted by the SFP intervention (n of parents reporting both pretest and posttest data = 509; $p < .001$ on all scales).

4. Associated Knowledge Areas

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

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**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

* In 2008, four district rallies were conducted reaching over 200 teens with intensive, advanced leadership skills. These participating youth indicated a 75% increase in their decision making capacity, a 46% increase in communication skills and a 100% expressed feelings of being a leader.

* Clark County conducted an in depth survey of their participating 4-H families. Of the 202 surveys returned, 86% of care givers indicated a significant improvement in one or more of the 24 identified life skills of their child as a result of their participation in the 4-H Youth Development Program.

* Vancouver 4-H mentored 133 court-assigned youth to produce 2400 pounds of fresh produce for local food banks. Of the 133 court assigned youth, 18 continued to volunteer beyond their court ordered time.

* 9,289 youth participated in one or more 4-H Camping programs in 2008. Camp participants averaged an 80% increase in their knowledge and understanding of natural resource systems and watersheds.

* 600 Whatcom County youth have demonstrated competence in GIS/GPS data systems as a result of participating in 4-H training opportunities.

Key Items of Evaluation

Program #5

V(A). Planned Program (Summary)

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

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	25.0	0.0	0.0	0.0
Actual	44.3	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
598602	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
598602	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
4322149	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

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	15000	30000	3000	0
2008	210532	523054	38716	13539

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

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	6	0	
2008	20	0	0

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
2008	300	0

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
2008	5500	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
2008	20000	153328

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. However, the natural resource base of the state is under constant threat from overuse, fire, invasive species, erosion and a myriad of other challenges. 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. 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 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

As a result of WSU Extension programs, management on over 153,000 acres of forest and rangeland was improved in 2008. Some examples follow:

- * As a result of integrated weed control programs in Ferry County (including introduction of biological controls, spread of Dalmation Toadflax has been halted on over 1 million acres. Use of biological controls has reduced costs for herbicide treatments by over \$5.6 million per year.
- * Diffuse knapweed has been suppressed on over 50,000 acres with biomass reduced from 1860 LB/AC in 1984 to less than 10 LB/AC in 2008.
- * 80,000 acres of have become certified as certified as sustainable forestlands and include management plans for special forest products.
- * Over 3 miles of riparian areas have been restored as a result of livestock management plans developed by WSU Extension faculty.
- * 99 cabins in Yakima County have been protected from wildfire by implementation of fire-wise strategies.
- * Independent assessments indicate that approximate 70% of the reduction in erosion in the Palouse River basin resulted from management changes recommended by WSU Extension.
- * As a result of the Climate Friendly Farming program, three on-farm anaerobic digesters have been constructed on dairy farms in WA. One additional digester is under constructions. This will facilitate processing of manure from 10,000 cows and lead to a reduction in emission of 70,000 tons of carbon dioxide per year while creating an additional 2.5 MW of electrical power for the region.
- * As a result of application of precision conservation technologies developed and deployed by WSU, application of nitrogen has been reduced by 5-30% on test farms. Widespread application of this technology promises to reduce N fertilizer application by up to 88,000 tons annually statewide.
- * As a result of a collaborative venture with the USFS, fuel load was reduced on 160 acres protecting 25 homes in the Bead Lake area. An additional 240 adjacent acres of USFS land was protected from wildfire.
- * Follow up surveys of Coached Forest Stewardship participants indicated that over 20,000 acres of timberland had undergone stand improvement practices by landowners. This equates to a potential savings in \$30 million resulting from decrease risk of wildfire.
- * As a result of recommendations from the Integrated Weed Control Project in King County, 2700 acres of land were treated for invasive species.
- * As a result of Coached Forest Stewardship programs in Western Washington, 90% of participants implemented new stewardship practices including treatment of 228 acres of forest habitat, improvement of 6 miles of forest roadways, and improvement of 7.5 miles of forest trails.

4. Associated Knowledge Areas

KA Code	Knowledge Area
121	Management of Range Resources
112	Watershed Protection and Management
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
2008	1500000	10854000

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 managed 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 program employ various methods to educate landowners and resource managers how to balance economic returns with the need to sustain the resource base.

Results

* 150 homes in the fire-prone Wenatchee area were protected from wildfire by land use changes resulting from the Sustainable Landscape program. Left unprotected, if only 1% of these dwellings were destroyed every year, savings due to reduced losses and reduced demand on emergency services would equal \$225,000 per year or \$2.25 million per decade.

* Savings in the cost of application of herbicides to control invasive species in Ferry County total \$5.6 million per year. This results from the replacement of chemical controls with biological controls as a direct result of WSU Extension-led Integrated Weed Control projects.

* As a result of sustainable forest products programs in Western Washington, 12 Hispanic families harvested over \$250,000 in Christmas greenery from forest lands; four new family-based businesses were started; and three Latino-owned companies market floral greenery to 4 countries and 10 states grossing over \$2.3 million in 2008.

* As a direct result of the WSU Climate Friendly Farming Program, 3 anaerobic digesters were constructed creating revenue streams from on-farm electrical generation produced from digestion of manure and industrial food waste. Dairies have implemented emission reduction contracts valued at \$250,000 annually. Additional carbon offset contracts could exceed \$1 million in annual value to producers.

* Programs focused on increasing efficiency of on-farm nitrogen use have demonstrated reduction in N application of 5-30%. Broader application of these techniques would save WA farmers up to \$35 million annually.

* Evaluation of the Coached Forest Stewardship Program indicates that 20,000 acres had timber stand improvement practices implemented. This equates to a long-term benefit of \$30 million in savings from wildfire losses and increased harvest potential.

* Westside Coached Forest Stewardship participants report increased revenues from sustainable forest practices of \$63,500 per year and receipt of over \$136,000 in state and federal cost-share payments.

4. Associated Knowledge Areas

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

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
2008	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

Learning and application were documented on numerous programs. For example;

* Escape cords are a critical feature on crab pots designed to render the pot incapable of trapping crab after a certain period of time. When pots are lost, the cords deteriorate and break keeping the pot open and allowing trapped crabs to escape. Before training on the use of escape cords, only 42% of crabbers indicated that they had used escape cords. After training, 98% indicated that they would use escape cords in the future, and in Snohomish County, escape cord use has increased by 15%.

* After training on sustainable landscaping, 74% of participants indicated that they had increased knowledge of native plants. This equated to a 30% increase in knowledge about the use of native plants in landscape applications.

* The Coached Forest Stewardship Program is designed to train landowners on sustainable forestry techniques including proper harvesting, thinning and fireproofing. After over 300 landowners were trained, only 3% failed to show measurable increases in knowledge. When Department of Natural Resources officials conducted follow up site visits, over 80% program participants had applied knowledge by implementing understory and native plant management programs.

* Youth attending the Summer Youth Forestry Institute gained important skills about natural resources. The ability to navigate using a compass increased from 45% to 100%. Additionally, the number of participants that could correctly explain the role of forests in carbon sequestration increased from 0 to 36%.

* Learning assessments of Master Gardener volunteers in Asotin County indicated a 62% increase in knowledge about hardiness zones; 59% increase in knowledge about disease and insect resistant trees; 52% increase in knowledge about proper tree and shrub planting; and 71% increase in understanding of pest life cycles.

* As a result of WSU Extension training in Mason County, 91% of residents indicated that the training had enabled them to identify failing septic systems; 33% reported that they would change to non-toxic cleaning products; 51% indicated that they would have their septic systems regularly inspected; and 36% indicated that they would switch to phosphate-free detergents.

4. Associated Knowledge Areas

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

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
2008	35	55

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

During 2008, numerous offerings occurred. Follow up was conducted on many of these programs. Results from the follow up surveys and other mechanisms are outlined below.

As a result of the Coached Forest Stewardship Program:

- * 100% of graduates had pruned forest trees and reduced wildfire fuels on their property.
- * 71% of graduates had planted trees.
- * 100% of graduates had provided or retained snags for wildlife habitat.
- * 71% of graduates had actively controlled noxious weeds on their forestlands.
- * 80% of graduates wrote land management plans.
- * 90% of graduates have implemented at least two recommended management practices.

As a result of the Community Urban Forestry project, tree topping by utilities has declined by 75%.

55% of Sustainable Landscape participants reported reduction in application of fertilizers and/or pesticides.

As a result of Water Quality programs on the Olympic Peninsula, 21% more landowners are practicing 'Puget Sound Friendly' practices 60-100% of the time and 85% report making at least one major water quality-related behavior change since becoming involved with the program.

Because of exposure provided by the WSU Extension Water Quality Program, the percentage of recreational boaters anchoring in eelgrass beds has been reduced from 20% to zero.

Among Master Gardener trainees....

- * 80% reported at reduced use of pesticides
- * 20% indicated that they did not use pesticides at all.
- * 73 persons indicated that they will grow some or all of their produce as a result of training received.

4. Associated Knowledge Areas

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

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

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

Key Items of Evaluation