

ANNUAL REPORT OF ACCOMPLISHMENTS AND RESULTS  
FY06 (October 2005 – September 30, 2006)  
WASHINGTON STATE UNIVERSITY EXTENSION

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## A. PLANNED PROGRAMS

### 1. NATIONAL GOALS

#### **Goal 1: An Agricultural System that is Highly Competitive in the Global Economy.**

Washington State University (WSU) Extension has once again opted to include all our agricultural programming under **Goal 4: Greater Harmony Between Agriculture and the Environment**. This does not suggest a lack of concern for production agriculture, but a change in perspective. Indeed it is because we realize the challenges facing the agricultural community that we do not separate out these two important goals. For agriculture in the state of Washington, competitiveness in the global economy requires that the agricultural community address environmental issues to be accepted by Pacific Rim nations as well as regional constituents.

We recognize that some of our programmatic impacts fit Key Themes identified under Goal 1. Those reports are included in Goal 4 and identified as Key Theme "Other" with the Goal 1 Key Theme identifier in parentheses.

**Goal 2: A Safe and Secure Food and Fiber System.** To ensure an adequate food and fiber supply and food safety through improved science-based detection, surveillance, prevention, and education.

#### **Overview**

The goal of WSU Extension food safety education is to ensure an adequate food and fiber supply and food safety through improved science-based detection, surveillance, prevention, and education. We also help Washington residents to obtain knowledge and adopt behaviors that reduce risks of illness from foodborne pathogens. Through USDA funded research, WSU Extension educators have developed key food safety messages for consumers. Educational programs are directed to address the following four major control factors that enable consumers to reduce their risk of foodborne illness:

- Cook foods adequately
- Avoid cross-contamination
- Keep foods at a safe temperature
- Avoid food from unsafe sources

In 2006, consumer food safety programs reached approximately 24,000 people. County extension faculty estimate that one-half of contacts concerned issues of food quality and half were food safety issues. Previous research estimates that 15 percent of consumer inquiries involve life threatening foodborne pathogens. Using this standard, Extension's food safety programs may have prevented serious illness or death for up to 3,600 people in the state.

In addition, fifty-seven volunteers with intensive training in food safety and preservation contributed 1,600 hours of outreach to families on both safe food preservation and food handling topics and reached nearly 10,000 people in 2006. Outreach methods included telephone hotlines, booths at farmer's markets and fairs, workshops, pressure canner gauge testing, and queso fresco classes for the Latino community. If volunteer time is valued at \$17.00 per hour, their contributions totaled \$27,200.

Germ City continued as an effective food safety outreach method in 2006. The objectives of Germ City are to enhance awareness of the importance of hand washing using science based education, improve effectiveness and frequency of hand washing, facilitate cognitive-behavioral change, and generate a database for future study and evaluation of hand washing education

programs. The program originated in Washington and now operates in 18 states. It was recognized with the 2006 Western Extension Directors Regional Award. Germ City programs reached about 4600 youth and adults in Washington in 2006.

Another significant audience for food safety education in Washington is food producers and processors. A number of Extension educators have received certification as Hazard Analysis Critical Control Point (HACCP) instructors and conduct numerous HACCP, sanitation and security workshops for food processors of seafood, meat, canned foods, and fresh produce. In 2006, Extension educators had contacts with 872 commercial and industry training participants.

<b>Sources of Funding and FTE For Goal 2</b>	
FTE Smith-Lever 3b and 3c	0.4
FTE Smith-Lever 3d	0
Federal Extension (\$)	\$94,064
Non-Federal (\$)	\$587,030
Other Federal (\$)	\$28,064
<b>TOTAL (\$)</b>	<b>\$709,161</b>

**Key Theme - Food Handling**

**Key Theme – Foodborne Illness**

- a. Training food service workers in food safety is a critical step in protecting the health of the state’s consumers, therefore, Washington State requires all food workers to pass a test on food safety issues prior to employment. In 2006, WSU Extension conducted training sessions in five counties to train commercial food service workers in collaboration with local health departments. Training focused on increasing those safe food handling behaviors that are most likely to reduce risk of foodborne illness in retail settings. Extension educators reached 9,412 food workers in 2006. Additionally, the Washington State Food Code was revised in 2004 to require that each food facility have a Person in Charge (PIC) with advanced food safety training. Therefore, a new training program called Person in Charge was also developed and piloted. The training gives food handlers the requisite knowledge to meet PIC requirements, to improve health inspection scores, and to eliminate or reduce the number of foodborne illnesses in the community. Classes were held at local health department meeting facilities and health inspectors were available to answer specific questions. In its pilot year, the PIC training reached over 400 food service workers.
- b. **Impact:** 3800 food service workers who participated in the basic training returned evaluation surveys (43 percent of those sampled). Fifty-nine percent indicated their understanding of how to keep food safe to eat was increased. From a list of food safety practices, the following were cited by over 40 percent of respondents as ones they had used or planned to use: Not working with food when sick, washing hands correctly and at the right time, avoiding bare hand contact with ready to eat food, using thermometers to insure safe temperatures, holding food safely at both cold and hot temperatures, reheating safely, thawing and cooling safely, and mixing sanitizers properly. An evaluation of the PIC training indicated that 10 percent of participants increased health inspection scores at their facilities. In addition, 75 percent made at least one procedural change in the facility, changed practices and/or updated other food handlers on food safety practices. Interviews with health inspectors indicated that facilities that have invested in the training got higher inspection scores and could answer food safety questions more accurately.
- c. **Source of Federal Funds:** Smith-Lever 3(b)(c), state funds, county funds
- d. **Scope of Impact:** State

## **Key Theme – Food Safety**

### **Key Theme – HACCP**

- a. Improper seafood handling and storage by fishermen, processors, retailers, and consumers results in loss of quality reduced economic value, wastage, reduced sales, and potential safety problems. Poor quality products cost the Washington seafood industry over \$5 million annually in lost sales and wastage, and seafood quality continues to be an impediment to increased per capita seafood consumption in the Northwest. Seafood safety issues are of great concern to consumers, and retail handling of seafood products is poor, resulting in low quality products and reduced sales and profitability.

Improved temperature control, handling, and sanitation are needed at all levels of harvesting, processing, and distribution to maximize the economic value of the catch, reduce contamination, increase product safety, and improve the marketability and consumer acceptance of Washington's seafood products. New U.S. Food and Drug Administration Hazard Analysis Critical Control Point (HACCP) regulations are now in effect for seafood processors.

#### **b. Impact:**

- 110 Fishermen and processing personnel participating in technical assistance sessions were able to deliver firm, fully scaled, completely bled, and well-cleaned salmon, maintaining or enhancing the price for troll caught fish during the summer season.
- Consumers increased their knowledge and skills in seafood handling, quality evaluation, safety issues, and utilization of non-traditional products.
- Improvements in sanitation techniques and temperature control were reported by fishermen, processors and retailers. In addition, 261 radio programs focused on seafood topics were recorded and aired reaching 10,000 citizens.

c. **Source of Funding:** Smith-Lever 3b and c, state funds, county funds

d. **Scope of Impact:** Statewide

## **Key Theme – Foodborne Illness**

### **Key Theme – HACCP**

- a. Although the US food supply is among the safest in the world, an estimated 7 million illnesses, 3,000 deaths, and billions of dollars in losses are caused by foodborne diseases each year. In addition, competition in the marketplace requires greater care in producing food products that meet the specific needs of buyers and the consuming public. Educating and training the food industry, its regulators, and suppliers through specific programs is an effective means of maintaining/improving the safety and quality of commercial food products.

- b. **Impact:** More than 760 food processors and packers, food safety regulators, food producers, growers, food safety educators, and participated in food safety training, and at the conclusion of the training 97% of program participants passed required written tests. Additionally, more than 500 firms in Washington now operate under a HACCP plan. Regulators in Washington are also demonstrating improved understanding of HACCP applications and food safety.

c. **Source of Funding:** Smith-Lever 3(b)(c), state funds, county funds

d. **Scope of Impact:** Multistate Extension—ID, IA, MN, MT, OR, PA, UT, and WA

**Goal 3: A Healthy, Well-nourished Population.** Through research and education on nutrition and development of more nutritious foods, enable people to make health-promoting choices.

### Overview

According to 2006 data, Washington continues to rank among the top states for the percentage of people experiencing severe hunger. Rates of hunger are particularly high for female-headed families with children. In addition, poor women have higher rates of low birth weight infants and higher rates of chronic diseases linked to diet, including conditions of overweight and obesity. Nutrition education with low-income families with children can have lifetime impact, making it possible for participants to live healthier lives and be productive members of society. In consideration of the needs and potential impact, the target audience for nutrition education in Washington is low-income families, including people receiving or eligible for food stamps and children receiving free or reduced price lunches at school.

At WSU Extension, both the Expanded Food and Nutrition Education Program (EFNEP) and the Food Stamp Nutrition Education Program (FSNEP) are branded under the name *Food \$ense*. In 2006, twenty-six EFNEP paraprofessional educators worked in 5 counties with leadership, training, and supervision from 5 professional faculty/staff. A total of 2,675 parents were enrolled in the 5 counties, impacting 10,761 family members. In two-thirds of these families, income was less than or equal to 100 percent of the poverty level. Forty-two percent of the children in these families were ages 5 and younger. In addition, a total of 2,606 youths were enrolled in EFNEP, with 72 percent in school enrichment programs.

The *Food \$ense* (FSNEP) program engaged 100,289 participants directly in one or more educational activities in 2006, operating in about seventy percent of the state's counties and with three tribes. Of that number, 60 percent were adults and 40 percent youth. Eighty-five percent of adults were food-stamp eligible and 45 percent of those reached were persons of color. Of the 60,358 adults enrolled in the program in 2006, 74 percent were enrolled in a series class and received an average of 5.2 lessons. The remainder was reached through newsletters. The majority (78 percent) of the 40,194 youth were reached through school enrichment programs that averaged 7.5 classroom visits. The remaining youth were taught through organized clubs, community events and after-school programs. Over 655 local partners collaborated with Extension in program planning and delivery, and provided in-kind contributions of staff time, space and equipment to *Food \$ense*. In addition to the direct educational contacts, an additional 2.02 million (estimated) people were reached indirectly by the program through newsletters, media features and community fairs.

WSU Extension educators also addressed priority health issues in their programming. Diabetes education was a primary state focus in the health arena. Approximately 400,000 Washingtonians (6 percent) have been diagnosed with diabetes—one of the leading causes of heart disease, stroke, kidney failure and lower limb amputations. Of people over age 40, approximately 12 percent of whites, 25 percent of African Americans, 50 percent of Native Americans, and 30 percent of Latinos in Washington State have diabetes. In Washington State, the percentage of people diagnosed with diabetes increased 39 percent between 1990 and 2000. The American Diabetes Association projects that the incidence of diabetes will increase by 165% by 2050.

The Living Well with Diabetes project is designed to reduce the risk of diabetic complications and to help people learn how to better manage the disease. The target audiences are people most at risk of complications, e.g., those who have diabetes, but are not currently seeking regular medical care for the disease. In 2006, 259 people in 8 counties were enrolled in Diabetes Awareness Education classes. Of these participants, 51 percent were white, 22 percent African American and 18 percent Russian Ukraine, with the remainder primarily from Native American and Latino groups. The average education level of participants was 12.7 years. The average age was 58 years. Nearly one-third of participants were low income (using the federal poverty threshold standards). Fourteen percent reported having no insurance coverage for diabetes supplies or medication. The Living Well with Diabetes program is one effort included in WSU Extension's Partnership for Diabetes Awareness and Education. External partners include the Joslin Diabetes Center at Harvard University, University of Hawaii, New Mexico State University, Pennsylvania State University, University of West Virginia, USDA/CSREES, Northwest Kidney Center and the American Heart Association. Internal WSU partners include the Colleges of Nursing and Pharmacy, and the Coordinated Undergraduate Program in Dietetics.

<b>Sources of Funding and FTE For Goal 3</b>	
FTE Smith-Lever 3b and 3c	0.412
FTE Smith-Lever 3d	18.615
Federal Extension (\$)	\$1,397,570
Non-Federal (\$)	\$8,721,590
Other Federal (\$)	\$133,853
<b>TOTAL (\$)</b>	<b>\$10,253,012</b>

**Key Theme – Human Health**

**Key Theme – Human Nutrition**

a. The Diabetes Awareness Education project began in 1999 in collaboration with Joslin Diabetes Center at Harvard University in Boston Massachusetts. The long-term goal of this project is to reduce the incidence of complications from diabetes. In its fifth year of implementation, the Living Well with Diabetes program operated in 8 counties, including an inner city area with a high percentage of African American residents and another urban community with a large Ukrainian population. In a new collaboration, WSU undergraduate dietetic interns were also trained to deliver the program to under-served areas of the state. The 1.5-hour initial program includes screening for A1C, blood pressure and cholesterol. Participants learn about the screening tests and what actions they can take to reduce the risk of complications. The initial class is followed by four weekly sessions on food, nutrition and physical activity. A follow-up evaluation is conducted by Extension three months after participation. In addition to Extension's evaluation efforts, the WSU College of Nursing used program data to support research on the management of blood pressure in people with diabetes from the Russian/Ukraine communities. This resulted in research on improving clinical effectiveness of diabetes education for this population.

b. **Impact:** In 2006, post-program evaluation results demonstrated the following:

- participants consistently showed improvements in knowledge about diabetes care and confidence to manage diabetes;
- participants reported improvements in self-care behaviors that support diabetes management, such as food choice, exercise, taking medication as prescribed and checking blood glucose;
- participants showed modest improvement in risk factors for complications (A1c and blood pressure) after three months;

- participants were more engaged in their care, reporting that they scheduled visits with health care providers regularly and asked for medical tests to monitor their diabetes.

c. **Source of Funds:** Smith-Lever 3(b)(c), state funds, county funds

d. **Scope of Impact:** Multi-state Extension (NM, WV, HI, and WA)

### **Key Theme – Human Nutrition**

#### **CSREES Focus Area – Nutrition with emphasis on Obesity and Behavioral Issues**

a. The WSU Extension *Food \$ense* Program provides food and nutrition education for food stamp recipients in partnership with a variety of community-based organizations. In 2006, 27 counties supported projects promoting good nutrition and physical activity, food safety, and improved utilization of food resources.

b. **Impact:** In 2006, 372,137 direct and 2.02 million indirect contacts were made. A total of 100,289 individuals were reached directly. Of the adults who were evaluated after a single-event educational program:

- 80% (of 1033) were motivated to improve food safety practices;
- 69% (of 2990) increased knowledge of how to select more nutritious low-cost foods;
- and 53% (of 2148) intended to eat a wider variety of foods.

Of the adults who graduated from a series of classes and completed follow-up evaluations:

- 76% improved two or more nutrition practices;
- 56% improved one or more food resource practices; and
- 46% improved one or more practices in food safety.
- Overall, 29% improved to acceptable levels of practices in all three categories.

Among youth Food \$ense participants evaluated:

- 75% reported increasing levels of physical activity to 60 minutes per day;
- 75% reported improvement in eating breakfasts that included 3 food groups;
- 76% now wash hands before preparing food;
- and 62% improved eating fruits and vegetables daily.

An evaluation of parents reached through school-distributed newsletters was also conducted. The families reported that as a result of reading the newsletters,

- 88% washed their hands more frequently before food preparation and eating,
- 73% ate more meals together as a family,
- 61% ate more fruits and vegetables,
- and 82% had higher levels of physical activity.

c. **Source of Funds:** Smith-Lever 3(b)(c), state funds, county, city

d. **Scope of Impact:** State specific

**Goal 4: Greater Harmony Between Agriculture and the Environment.** Enhance the quality of the environment through better understanding of and building on agriculture's and forestry's complex links with soil, water, air and biotic resources.

**Overview**

Washington State University (WSU) Extension increase agricultural profitability and competitiveness while enhancing natural resources and the rural environment through research-based education, demonstration, applied research, and development programs. Multistate programs include joint programming with Alaska, Idaho, Oregon, and other states and resulted in significant enhancement of extension programming in risk management, forestry, water quality, livestock production, fruit and vegetable production, and many other areas. Additionally, Extension educators work closely with researchers in California, Colorado, Idaho, Texas, and Washington to test the adaptability of new cultivars and extend that knowledge to Washington potato growers.

WSU created interdisciplinary research and extension teams to address critical issues related to Integrated Pest Management (IPM) and potato production. Additionally, extension, research, and teaching partnerships through the Center for Sustaining Agriculture and Natural Resources (CSANR) address issues associated with small farms, direct marketing, organic production and climate change.

Extension enhances the economic, environmental, and social well-being of communities through aiding in establishment of local food systems... This includes expansion of the scale and participation at farmers' markets and supporting harvest celebrations throughout the state.

Extension programs led to reduction in pollution and reduce water resource degradation from contaminants such as failing onsite sewage systems, household hazardous waste, manure pathogens, nutrients, pesticides, and soil erosion. Extension programs also reduced impact of terrestrial and aquatic invasive species and enhanced stewardship and profitability of natural resource-based industries.

<b>Sources of Funding and FTE For Goal 4</b>	
FTE Smith-Lever 3b and 3c	16.66
FTE Smith-Lever 3d	2.47
Federal Extension (\$)	\$1,836,052
Non-Federal (\$)	\$11,457,957
Other Federal (\$)	\$6,278,671
<b>TOTAL (\$)</b>	<b>\$19,572,680</b>

- a. Before 2003, viable management systems were lacking for the control of white mold in potatoes in the Columbia Basin of Washington and Oregon. Frequent sprinkler irrigation applications and dense crop canopies promoted prolonged plant surface wetness and high humidity. This created an ideal environment for disease development. On average, 2.5 fungicide applications were used to control these infestations at a total cost of almost \$100 per acre. Traditionally, initial fungicide application was made just prior to or at row closure, but WSU research demonstrated that this strategy was ineffective. Instead an initial application one to two weeks later at full bloom of primary inflorescences significantly reduced white mold on potato stems when compared to both traditional (row closure) treatment or non-treated controls. This information was disseminated to growers at field days, potato conferences, and Extension meetings



**b. Impact:**

- Seventy percent of potato growers changed timing of initial fungicide application based on WSU recommendations resulting in an estimated 10.5% increase in tuber yields.
- Surveys of potato fields and growers indicated that the mean number of fungicide applications necessary for effective control of white mold was reduced from 2.5 to 1.3 applications.
- The mean cost of an application decreased from \$100 to \$31.68 per acre.
- Across the Columbia Basin in Washington, the estimated annual savings generated by this new strategy (85% of 142,000 acres) is \$7,642,700

**c. Scope of Impact:** Multi-state (Washington and Oregon)

**d. Source of funding:** Smith-Lever 3(b)(c) and grants

**Key Theme:** Integrated Pest Management

**Key Theme:** Other (Goal 1: Plant Production Efficiency)

**Key Theme:** Other (Goal 1: Organic Agriculture)

**a.** Cherry fruit fly is the key pest of sweet cherries in the Pacific Northwest states and Canada. Prior to the initiation of this project, all of the insecticides used to control this pest were the older technology organophosphates and carbamates. A total of about 270,000 pounds active ingredient of this class of product was applied each season to control this pest on the 40,000 acres of sweet cherries in the region. Environmental and employee safety issues led to restrictions on use of these older products. Because there are numerous new products and technologies emerging educational programs were launched to update producers on available organic and conventional control mechanisms. New techniques were developed and demonstrated to the growers in a practical, hands-on manner. The results of the trials were also relayed to the producers as they evolved by newsletter, numerous presentations, and through web sites.

**b. Impact:** Several new control materials are either registered or will soon be due to this work. It is now possible, and practical, to control this pest without use of any of the organophosphate or carbamate insecticides exclusively used in the past. Organic growers once faced with a critical crisis with this insect, now effectively control of the cherry fruit fly with a bait-based system.

- The number of acres on which the bait system was used increased from 11,000 to 45,000 to 77,000 acres during the first three seasons of use.
- Cherry growers saved about \$2.75 million in material, labor and application costs over the past three seasons.
- Future savings are estimated to be \$1.5 million per season.
- Use of organophosphates and carbamate insecticides was reduced by about 70,000 pounds in Washington between 2003 and 2006.
- Reduction of the use of all older chemical products now exceeds 100,000 pounds/year.
- Employee exposure to the older products while applying control sprays was reduced by 8-10,000 hours.
- Data from this project led to registration of two effective organic materials in Canada.

**c. Scope of Impact:** Multi-State (Idaho, Oregon, Washington), International (Canada)

**d. Source of Funding:** Smith Lever 3 (b)(c), State Funds, Funds, Grants

**Key Theme:** Sustainable Agriculture

**Key Theme:** Other (Goal 1: Plant Production Efficiency)

- a. Twenty to fifty percent of hay produced in the Columbia Basin is exported to Pacific Rim countries with Japan being the largest single market. Sales to the region from Washington State totaled \$377 million in 2005 with almost 2/3 of these sales coming from the Columbia Basin region. The Japanese market demands higher fiber, aesthetic characteristics and packaging instead of traditional US quality standards (protein and energy content). Similarly, timothy hay is favored by the Japanese racehorse industry as fodder for their high-value horses although it has much lower feeding value than legume hays. Timothy hay is also fed to dairy herds as a source of fiber. Columbia Basin hay producers require unique knowledge and skills to produce hay for both domestic and Pacific Rim markets. To address this need, the WSU hay production program was developed around four objectives: 1) provide unbiased forage yield and feed quality data on new genetic strains of forage crop varieties, 2) investigate new environment-friendly weed management products, 3) investigate ways of increasing efficiency of production, and 4) disseminate information to producers with which they can make informed decisions regarding new genetics, crop protection chemistries and crop management methodologies.
- b. **Impact:** The Washington State Statistics Service indicates that hay yields per acre in the Grant-Adams Counties area have increased consistently for the past five years, resulting in \$6.8 million more value in 2006 than in 2001. This occurred even though the price received per ton of hay by the producer remained unchanged. Through WSU Extension organized educational events, field days, and on-farm demonstrations, producers report increased ability to self-diagnose plant symptoms caused by insect and pathogen attack on their forage crops. From surveys of Washington hay producers:
  - 74% of producers consult WSU alfalfa variety trial data before choosing new genetics
  - 86% are better at controlling weeds which potentially increases net return by 20%
  - 75% have adopted tarping systems that protect hay from losses due to weather exposure resulting in increased revenue by 28% per year.
  - two-thirds of surveyed producers report conservation of irrigation water and power resulting in more Columbia River water available for increased stream flow and hydroelectric power generation.
- c. **Scope of Impact:** State Specific (Grant and Adams Counties)
- d. **Source of Funding:** Smith-Lever 3(b)(c), State Funds, County Funds, Grants

**Key Theme:** Integrated Pest Management

**Key Theme:** Other (Goal 1: Plant Production Efficiency)

- a. Powdery mildew is the most economically important disease agent in wine grapes and cherries in Eastern Washington. Until recently, powdery mildew was typically managed using demethylation-inhibiting fungicides. As the fungi develop resistance to DMI fungicides, producers were had to apply increasing rates of the material to obtain satisfactory control. This resulted in greater expense and excessive use of fungicides that can harm the environment and human health. Oil-based disease management programs were developed in orchard and vineyard trials. Results were transmitted to clientele through articles in scientific and technical journals and in the popular press, disease management workshops, and oral presentations.

**b. Impact:** The oil-based powdery mildew programs altered disease management in the cherry and grape industries. Cultural practices were also altered in order to accommodate improvement in disease management.

- Oil programs made powdery mildew more manageable and reduced input costs by up to \$200 per acre.
- Less intensive use of resistance-prone fungicides has delayed the development of resistance and allowed producers to reserve these chemicals for more extreme infestations.
- Oil-based mildew management programs are also providing a viable control mechanism for organic fruit producers.

**c. Scope of Impact:** Statewide

**d. Source of Funding:** Smith –Lever 3(b)(c), State Funds, Grants

**Key Theme:** Integrated Pest Management

**Key Theme:** Other (Goal 1: Plant Production Efficiency)

**a.** The cereal leaf beetle (*Oulema melanopus*) has been a serious cereal pest in the US since the 1960s. While oats, wheat, and barley are its preferred food, the cereal leaf beetle (CLB) also feeds on perennial grasses such as timothy, Kentucky bluegrass, orchardgrass, and various wild grasses. CLB was first discovered in Washington State in 1999 and has now been detected in 17 counties. Initially the insect was concentrated in irrigated cereals but it has now become a problem in some higher rainfall, dryland regions of eastern Washington. The estimated potential economic impact of the CLB is about \$21 million if no remediation occurs. Treatment with insecticide such as the pyrethroid Warrior can provide a degree of control, but this process costs growers \$10-15 per acre. It is estimated that 50% of the irrigated spring wheat acreage is treated annually resulting in an annual cost of over \$3 million. In addition to being costly, the insecticides are deleterious to beneficial insects, including CLB predators such as the ladybird beetle. Beneficial parasitoids (minute species of wasps) have been identified. These are not harmful to people, pets, livestock, or plants. One parasitoid, *Tetrastichus julis* lays its eggs in CLB larvae. This wasp is typically easy to establish but its emerging larvae only kill CLB in the pupal stage, after the CLB larvae have damaged the crop. Another wasp, *Anaphes flavipes*, deposits its eggs in CLB eggs and the host insect dies before it hatches or damages the crop; however, this species has been harder to establish in the drier western states. When used in tandem, these parasitoids have together reduced beetle populations about 60% and grain losses to less than 1% in other regions of the US. Our goal is to establish these same beneficial species in Washington State as a long term, sustained measure to keep the beetle at sub-economic levels.

**b. Impact:** New insectaries were established in Columbia and Garfield Counties. Larval parasitoid has since migrated into dryland areas. It is now approaching population equilibrium across much of the dryland farming areas.

- CLB levels in the 3 oldest insectaries imploded due to parasitism.
- Fifteen of the seventeen farmers surveyed chose not to spray their fields due to the effectiveness of the parasitoids.

**c. Scope of Impact:** Statewide

**d. Funding:** Smith-Lever 3(b)(c), state funds, county funds, grants

**Key Theme:** Other (Goal 1: Animal Production Efficiency)

**Key Theme:** Other (Goal 1: Animal Health)

**Key Theme:** Other (Goal 2: Food Safety)

**a.** Cattle and calves rank 3<sup>rd</sup> among agricultural commodities in Washington State and contribute over \$600 million annual to the regional economy. The Grant/Adams County region is one of the state's major beef production areas with 175,000 calves produced annually and 80,000 head of cattle fed in commercial feedlots in the two counties. The future of Washington animal agriculture depends upon improved production efficiency, natural resource management, and consumer confidence in food and environmental quality and safety. In partnership with the Washington Cattlemen's Association, the Cattle Producers of Washington, Washington Beef Commission, and the Washington State Dairy Federation, a statewide beef quality assurance program was established.

**b. Impact:** Feedlot employees and cow/calf producers increased their knowledge about quality assurance issues, consumer demand, and food safety. Producers (adults and youth) recognized their responsibility to food safety in the food continuum and learned about production standards and procedures of each of the other segments in the beef production industry. Beef Producers learned about important decisions that cattle buyers make when evaluating cattle for purchase and why associated premiums and discounts exist for these animals.

- Producers indicated that they are keeping good records and implementing quality assurance guiding principles and expect to do even more the next year.
- 4-H leaders, superintendents, and show management are now utilizing ultrasound technology and carcass data to teach youth, parents, and breeders how to select and raise high quality beef cattle demanded by today's market.
- Cow/calf and stocker producers along with cattle feeders, packers, retailers and consumers are more effectively communicating with each other about the importance of each segment to the success of the entire beef industry and about the production requirements and standards of each of these segments.
- Packing plants harvesting market steers from local fairs are utilizing Health Record (Quality Assurance Form) in the HACCP plan.
- Higher quality market beef projects are being exhibited at Grant County Fair as a result of carcass and ultrasound data cattle producers (adults and youth), parents, leaders, and advisors are receiving.
  - Over 89% of the steer carcasses evaluated graded Choice- or better, with an average yield grade of 2.2.
  - The quality grade improved by 22% and yield grade improved by 32% from 2005 to 2006.
  - 32% of the steers qualified for Certified Angus Beef premiums and no carcass were discounted for failing to meet quality standards.

**c. Scope of Impacts:** Statewide

**d. Source of Funding:** Smith-Lever 3(b)(c), state funds, county funds, grant funds

**Key Theme:** Sustainable Agriculture

- a. When conventional intensive tillage methods are employed, cropland soil erosion in the Inland Northwest is a major production and environmental concern. In low-rainfall areas, wind erosion has reduced soil productivity, and blowing dust causes air quality problems in downwind areas. Cropland water erosion, particularly in the intermediate and higher rainfall zones, has reduced soil productivity and contributed to off-site sediment and water quality problems. In addition, intensive tillage has accelerated the loss of soil organic matter critical to soil quality and productivity. The adoption of no-till, direct seeding and other conservation tillage systems has been handicapped by the lack of effective seeding equipment, management technologies, and USDA farm program limitations on longer, more diverse crop rotations necessary to control weeds, diseases and insects in reduced tillage systems.
- b. **Impact:** Over the past 30 years, scientists from the Pacific Northwest's land-grant universities and the USDA Agricultural Research Service have collaborated with growers and grower organizations on a wide variety of conservation tillage systems research and education projects under the STEEP (Solutions To Environmental and Economic Problems) program. Northwest research is developing new technologies and management strategies that not only provide effective soil erosion control, but also improve soil quality and are economically viable as well. Numerous field days, conferences, workshops, publications, Web sites, and newsletters have been produce to transfer the research information to growers. Direct seeding is gaining a significant foothold in the region. For example, fully 70% of the acreage in Columbia County is under direct seeding.
- c. **Scope of Impacts:** Statewide
- d. **Source of Funding:** Smith-Lever 3(b)(c), state funds, county funds, grants

**Key Theme:** Hazardous Materials

**Key Theme:** Pesticide Application

- a. Pesticide handlers and their employers need training in the correct use of pesticides and safe pesticide handling methods. Specific training needs include mixing/loading, environmental protection, personal protective equipment, decontamination, cleanup and disposal. Additionally, employers are required to comply with US Worker Protection Standard (WPS). Educational needs are two-fold. They need to 1) know the requirements of the WPS and 2) they need the skills and resources to meet the training component of the WPS.
- b. **Impact:** Three hundred people attended the Ag Safety Day. Program included 3.5 hours of pesticide safety training. Evaluations indicated that change in practices would occur in the work environment of 92% of those responding. This number represents approximately 115 farm operations. Over 200 pesticide handlers learned best management practices for handling pesticides. In addition to safe handling methods, they learned routes of exposure, take home pathways and methods to mitigate environmental impact. Ninety percent of those attending reported increased knowledge by means of pre- and post-training self-assessment. One hundred handlers and or safety personnel learned the requirements of the WPS and the training component of the WPS. Trainers were trained in effective interactive training methods suitable for on-farm WPS training. Individuals received training materials and identified sources for training materials.
  - Ninety five percent of attendees indicated knowledge gained and an increase in training skills.

- Department of Labor and Industries reported that cholinesterase depressions had decreased in 2006 when compared to 2004 and 2005. Follow up interviews indicated that training was a major factor determining if an individual experienced a measurable depression.
- The Dept. of Labor publicly acknowledged that this workforce is better trained and workers are making positive behavior changes relative to the use of agricultural pesticides.

**c. Scope of Impacts:** Statewide

**d. Source of Funding:** Smith-Lever 3(b)(c), state funds, county funds, fees and sponsorships

**Key Theme:** Other (Goal 1: Plant Production Efficiency)

**Key Theme:** Other (Goal 1: Plant Germplasm)

**Key Theme:** Other (Goal 1: Agricultural Profitability)

a. Cereal growers and the agribusiness industry need comprehensive information on the adaptation and performance of winter and spring wheat and barley varieties across the different climatic regions of eastern Washington. The WSU Extension Uniform Cereal Variety Testing Program evaluates winter and spring wheat and barley varieties under both dryland and irrigated conditions. The current program has over a 50-year history providing growers and the agribusiness community with relevant varietal selection data to bolster the wheat and barley industry in Washington State.

b. **Impact:** Grower change in variety adoption by agroclimatic zones in Washington using Variety Testing Program data is estimated to exceed 70% of acres planted. As a direct result significant economic impacts can be directly tied to this program.

- An increased value of over \$30 million was realized by growers as a result of their selection of the highest yielding varieties based on results from the Variety Testing Program (5 bu/ac increase in yield on average).
- A 100% increase in Hard Red Winter (HRW) wheat acreage is expected in 2007. This change is largely due to the recognized increase in value demonstrated by the Variety Testing Program. This will result in an estimated increase in crop value of over \$10 million annually compared to varieties harvested in 2006.
- Grower adoption of novel trait winter wheat varieties with the Clearfield technology exceeded 100,000 acres in the first year of commercial availability and represented over 5% of all winter wheat acres. The ability for producers resulting in an estimated increased in value of over \$3 million in 2006.

**c. Scope of Impact:** Statewide

**d. Funding:** Smith-Lever 3(b)(c), state funds, grants

**Key Theme:** Sustainable Agriculture

**Key Theme:** Other (Goal 1: Small Farm Viability)

**Key Theme:** Other (Goal 1: Agricultural Profitability)

**Key Theme:** Other (Goal 1: Adding Value to New and Old Agricultural Products)

a. Five years ago, agriculture had largely disappeared from Jefferson County. The county had the oldest median age landowners in the state, and the five largest landowners were over 70 years of age. At that time a new food coop was struggling and the farmers market had no staff and was on the brink of closing. An extensive public education program was initiated to

improve the agricultural situation in the county. Farm entrepreneurs were recruited and taught about direct marketing. Financing was arranged for emerging direct marketers and specialty cheese making classes were developed and delivered. Two eleven-week Cultivating Success and Tilling the Soil classes were taught to 76 emerging entrepreneurial farmers along with other educational programming and materials.

**b. Impact:** As an outgrowth of this holistic effort:

- Direct farm sales grew from \$60,000 in 2003 to over \$500,000 in 2006.
- The first cheese new manufacturer in 30 years began operations in Jefferson County employing 10 persons.
- Eighteen new farms were established,
- Six full-time farmers are supporting their families through direct market sales.

**c. Scope of Impact:** Jefferson County

**d. Source of Funding:** Smith-Lever 3(b)(c), state funds, county funds

**Key Theme:** Other (Goal 1: Risk Management)

**Key Theme:** Other (Goal 1: Managing Change in Agriculture)

**a.** Agriculture is a fundamental part of Klickitat County's economic, social, historic, cultural and recreational fabric. Risk management and succession planning are critical to the survival of agriculture in the region.

**b. Impact:** The Farm and Ranch Survival Kit program received \$21,400 from the Western Center for Risk Management Education for educational outreach to agricultural producers in the Mid-Columbia area. Program participants reported already making significant and essential changes to their farm enterprises structure as a result of participating in the program. Of 49 program participants:

- 16 reported that they started or completed an estate or succession plan
- 14 started or completed a business plan
- 11 started or completed a marketing plan for their farm or ranch
- 7 started or completed a change in their business structure
- 17 reviewed their insurance policies to determine if they have appropriate coverage
- 10 analyzed their financial situation with their lender.

**c. Scope of Impact:** Multi-State Washington and Oregon

**d. Source of Funding:** Smith-Lever 3 (b)(c), state, county, grants

**Key Theme:** Other (Goal 1 Animal Health)

**Key Theme:** Other (Goal 2 Food Safety)

**a.** Consumers desire humanely produced, safe, high quality food. Inattention to consumer desires results in loss of market share and demand for beef products. Producer education programs were designed to create a farm to table approach is required to help individuals better understand consumer needs and desires and to help farmers and ranchers more effectively produce meat products that are appropriate for market demands. Additionally, quality assurance programs were developed and delivered to raise awareness of the

economic effect of carcass defects and to teach producers how to effectively manage animals and deliver health products to reduce these impacts.

**b. Impact:** Over 90% of participants in 2006 Beef Quality Assurance trainings indicated that they intended to make management changes focused on improving the quality and safety of meat products derived from their animals.

- This program has resulted in reductions in defects such as fluid-filled lesions increasing the value of beef carcasses produced in Washington State by \$400,000 per year.
- Losses due to beef quality defects declined from \$63.71 per carcass in 2000 to \$55.68 in 2005 primarily due to BQA programs.
- There have been no illegal residues found in Washington youth livestock projects since 2003.

**c. Scope:** Statewide

**d. Source of Funding:** Smith-Lever 3(b)(c), state funds, county funds, grants

**Key Theme – Endangered Species**

**Key Theme – Natural Resources Management**

**Key Theme – Water Quality**

**Key Theme – Wetlands Restoration and Protection**

**a.** Development practices and landscape modification play significant roles in determining the long-term health of our aquatic systems. The health of Washington citizens and the state's economy is jeopardized by urban development, which affects water resources and aquatic species through nonpoint source pollution, groundwater contamination, and decline of aquatic habitats and wetlands. Poor land-use practices in urbanized areas because failing onsite sewage systems, soil erosion, pet waste pathogens, and storm water runoff carrying household hazardous waste, excess nutrients, and pesticides. These in turn threaten more than 60 percent of Washington's drinking water that comes from groundwater, endangered salmonid species, and the more than \$70 million in shellfish harvest sales as well as contributing to a greater flooding risk. Real estate professionals influence these land-use practices by their role as an intermediary between a buyer or seller and a piece of property. Yet they tend to have poor knowledge of environmental issues. A local needs assessment identified real estate professionals and developers as an underserved, high priority audience for water resources education. WSU Extension developed and implemented a Water Resource Education Program for Real Estate Professionals with courses that cover the science, policy, and regulations of water resource related issues such as onsite sewage systems, wetlands, shorelines, salmon and streams, and low-impact development so real estate professionals can make environmentally suitable decisions regarding development and land-use practices, as well as educate their clientele about land stewardship, water quality, and aquatic habitat.

**b. Impact:** Real estate professional attendees received continuing education credit towards their biennial professional license re-certification. The long-term goal of the program is to protect and improve the health and well being of Washington's citizens, and protect natural resources that add value to the state's economy. The real estate community acts as the "medium" toward this goal by transferring knowledge gained to clients who will consequently modify their land-use behaviors. Attendance in 59 courses over eight years totals 1,526 with 780 actual individual attendees. In 2005, a total of 190 individuals took nine classes. Findings from post-course evaluation responses include:



- 97 percent of respondents said they would recommend the program to colleagues,
- 88 percent are now more knowledgeable of possible land use problems,
- 59 percent were able to relay specific information from the course to clients,
- 52 percent were able to give resource information to clients,
- 61 percent were better able to value a property; and
- 34 percent said that the course helped in dealing with local development requirements.

c. **Source of Funding:** Smith-Lever 3(b)(c), state funds, county funds

d. **Scope of Impact:** State specific

**Goal 5: *Enhanced Economic Opportunity and Quality of Life for Americans.***

Empower people and communities, through research-based information and education, to address economic and social challenges facing youth, families, and communities.

**Overview**

Washington State University (WSU) Extension offers a wide array of youth; family and community development programs that impact economic opportunity and quality of life for the people of Washington State. WSU Extension recognizes economic development as an investment in Washington's communities. The WSU system seeks to maximize this investment through building the knowledge and capacity of private, public and non-profit leaders to undertake actions, which improve the economic well being and quality of life within our diverse local communities.

Included are programs in the state Plan of Action that address 1) *strengthening life skills for youth and adults*, 2) *workforce preparation*, 3) *character education*, 4) *child care and parenting education*, 5) *building strong communities*, 6) *leadership for public decision making*, and 7) *responding to economic and social change*, and 8) *energy efficiency*. In addition, Extension maintains its commitment to ongoing youth and family programs that are both volunteer-based and directly delivered by Extension educators and we have a strong Extension Energy Program.

- 1) *Strengthening life skills* is a common goal of both 4-H Youth Development and Family Programs in WSU Extension. A variety of delivery mechanisms are used to reach youth and adult audiences with life skills education, including 4-H club activities and events, school enrichment, and volunteer outreach programs for adults. The primary audience for adult life skills programs is low-income families, and 4-H outreach that includes at-risk youth (see Key Theme-Life Skills).

Continuing through 2006, the Washington State 4-H Strategic Plan served as the operational blueprint for program priority setting, funding allocations and management structures. As an offspring of the 4-H Strategic Plan, the Teen Task Force Report began implementation in 2005 for a total updating and revision of 4-H teen leadership programs across the state of Washington. The work became more fully developed in 2006.

- 2) *Workforce preparation* and community development efforts are closely linked. The Center to Bridge the Digital Divide (CBDD), with participation from a host of multidisciplinary WSU faculty and staff, moved forward with its mission to assist rural and urban underserved areas to overcome barriers to gaining the economic and social benefits of participating in the telecommunications revolution. Information communication technologies (ICT) including modern telecommunications, computers, software and digital application represent a powerful

tool to improve teaching and learning; economic opportunity, health care access and effective governance. Log on to <http://cbdd.wsu.edu> to learn about 4-H youth tech corps and the E-safety, e-work and high-tech high school programs of the CBDD (see **Key Themes – Jobs/Employment, and Workforce Preparation – Youth and Adult**).

2006 saw the continued development of the Center for Youth Workforce Preparation. This unique Center, created on our WSU-Vancouver campus is a unique collaboration of 4-H Youth Development with the College of Engineering and Architecture to attract secondary school youth to careers in science and technology and to prepare them for academic success in college. (See **Key Themes – Jobs/Employment, and Workforce Preparation – Youth and Adult**).

- 3) *Ethics* refers to standards of conduct, standards that indicate how one would behave based on moral duties and virtues, which themselves are derived from principles of right and wrong. The Aspen Declaration on Character Education concludes that because the character and conduct of our youth reflect the character and conduct of society, “Every adult has the responsibility to teach and model the core ethical values and every social institution has the responsibility to promote the development of good character. Although the responsibility for developing the character of youth is first an obligation of families, it is also an important obligation of faith communities, schools, and youth and of other human service organizations.” Character development is best achieved then these groups work in concert in entire communities. In order to satisfy the 4-H goal of developing youth to their greatest potential, we cannot overlook the importance of think, talking and modeling ethical behavior. Youth leaders are in an ideal position to help develop and nurture ethical character in young people (see **Key Theme – Character/Ethics Education**).
- 4) Parenting education and childcare programs in Washington State focus not only on parents as a direct audience, but also on caregivers and parent educators from a variety of systems. WSU Extension 4-H continued as a contractor for the State of Washington Department of Social and Health Services to provide professional development and certification to identified state standard credits for childcare providers. In 2006, WSU Extension 4-H provided to over 2,300 school age care providers training, information and technical support services. Three statewide conferences were conducted with attendance of over 400 childcare providers. WSU Vancouver was the host site for the 2006 Northwest Parenting and Family Education Conference, now in its 12 year. Begun by WSU Extension, co-sponsoring states have now grown to three: Oregon State University Cooperative Extension and University of Idaho Extension have been partners in the conference for the last five years and Montana State University Extension joined as a collaborator in 2006. Two hundred thirty eight people attended the conference, with 48 percent participating for the first time. In addition to providing leadership for the regional conference, the parenting team also collaborates with state agency partners in expanding the reach of the Strengthening Families Program for Parents and Youth 10-14 (see **Key Themes—Parenting**).
- 5) Extension educators worked with hundreds of community leaders and organizations across the State on a myriad of projects to build stronger communities. Examples included conducting an electronic survey of various rural small businesses regarding business assistance and training needs; leading community education programs; developing cross cultural training and enrichment programs; and providing leadership development workshops to citizens, volunteers, and board members (see **Key Theme – Community Development**).
- 6) *Leadership for public decision* is enhanced through WSU Extension’s Learning Centers, The William D. Ruckelshaus Center, the Certified Public Officials Program, and the Division of Governmental Studies and Services. These programs have continued to work with civic leadership and government officials and agencies (see **Key Themes – Community Development, Leadership Training and Development, and Impact of Change on Rural Communities**).

- 7) In *Responding to Economic and Social Change*, WSU Extension educators delivered educational programs, conducted applied research and provided technical assistance across the spectrum of local, state and regional community/economic development. Although local, state and regional leaders may be aware of the need for better information and analysis of trends and developments in order to diagnose and establish a sound understanding of their economy, how they work, how they are changing, and how they can be changed, they frequently lack the resources or staff trained to know how to access, organize, synthesize, analyze and interpret the pertinent data. Smaller rural and mid-size areas are especially limited in their capacity to initiate and undertake the applied research needed to establish a sound baseline of information and analysis from which to build a broad collective understanding of where they've been, where they are, and where they may likely be going. (see **Key Themes – Community Development, Leadership Training and Development, and Impact of Change on Rural Communities**).

<b>Sources of Funding and FTE For Goal 5</b>	
FTE Smith-Lever 3b and 3c	9.54
FTE Smith-Lever 3d	0
Federal Extension (\$)	\$1,649,411
Non-Federal (\$)	\$10,293,215
Other Federal (\$)	\$2,446,912
<b>TOTAL (\$)</b>	<b>\$14,389,538</b>

**Key Theme – Children, Youth and Families at Risk**

**Key Theme – Parenting**

- a. The Strengthening Families Program (SFP) for Parents and Youth 10-14 Years is a nationally recognized curriculum with a strong longitudinal research base. Developed by Iowa State University, the program has successfully documented its effectiveness in delaying adolescent substance use, reducing youth aggression and improving family management skills. As a result, it is considered a “best practice” program by many state and federal agencies. Extension faculty at WSU Extension first recognized the opportunity to become training and research partners in SFP in 1999. Since that time, we have trained over 400 facilitators from 29 Washington counties and collected evaluation data from over 100 programs and over 2000 parents and youth. In 2004, we introduced a Spanish language version of the program and are now the sole training organization for Spanish language facilitators in Washington State.
- b. **Impact:** Evaluations are administered to program participants during the first (pretest) and last (posttest) sessions of the 7-week Strengthening Families Program for Parents and Youth 10-14. Separate evaluation instruments are utilized for adults and youth. The following impacts are reported for a sample of 1072 adult caregivers and 1082 youth from 17 Washington counties. Respondents were 71% European American, 19% Latino/a, 6% Native American and 4% other races/ethnicities. Family characteristics that promote healthy development of children and youth are termed “protective factors.”

Parents/caregivers reported statistically significant ( $p < .05$ ) improvement in four family protective factors: Rules about Substance Abuse (clear and specific guidelines and consequences), Positive Involvement (spending time together and sharing decision-making), Family Harmony (adults control temper and criticism), and Communication (open discussion of situations and feelings). Positive change on these scales indicates that parents/caregivers report improvement in their parenting practices over the seven-week course of the program. Family and individual

protective factors are also measured from the youths' perspective. Youth reported statistically significant changes ( $p < .05$ ) on the following scales: Attachment (youth feel close to parents/caregivers); Family Harmony; Positive Involvement; Family Management (parents supervise and enforce rules); and Rewards (parents reward good behavior). Positive change on these scales indicates that youth think parents/caregivers have changed their parenting practices over the course of the program. Our research documents that youth scores change more slowly than parent scores as effects of new parenting practices take hold.

c. **Source of Funds:** Smith-Lever 3(b)(c), state funds, county funds, grant funding

d. **Scope of Impact:** State specific

**Key Theme – Communications Skills**

**Key Theme – Leadership Training and Development**

**Key Theme – Life Skills**

**Key Theme – Youth Development/4-H**

a. The Life Skills Evaluation System (<http://ext.wsu.edu/lifeskills>) is a web-based accountability tool used by Extension educators to document the changes in knowledge and skills that result from participation in life skills education. Extension educators use the system to create standardized evaluation forms online. It allows local programs to evaluate all of the major (Forum and Know Your Government) 4-H statewide events as well as individual county youth and family programs. The data are then aggregated on a statewide basis to report changes in life skills that result from WSU Extension programs. Significant participant progress is indicated in all eight-focus life-skill areas. By using a consistent evaluation format, Washington State is better able to compile impact data across county and specific event barriers. In 2006, over 1,700 participants from various programs completed evaluations.

b. **Impact:** Strengthening Life Skills in the Washington State University Extension 4-H Youth Development Program takes on many facets and program initiatives including: a positive relationship with a caring adult; a safe physical and emotional environment; opportunity for skill mastery and content; opportunity to be of service to others; opportunity for goal setting self-determination and decision-making; a positive connection to the future; and the creation of an inclusive atmosphere. These programs reached over 55,795 Washington State youth with exciting, engaged programs of skill enhancement. Typical results from the Life-Skills evaluation data indicate positive gain from pre-program to post-program impacts. The buffet table of programs includes outdoor recreation/leadership and longboat adventure education, and subject matter including plant and animal sciences, family living, citizenship and local government engagement, and technology. About 84 percent reported gains in life skills as a result of program participation. The life skill area in which the largest changes were reported was *leadership*, where respondents scored .68 higher after participating in an Extension program (on a 4 point scale). The specific indicator with the largest gain was using different leadership styles (.71 on same scale). The general life skill area with the next highest level of positive change was *decision making* (.69 gain on a 4 point scale). The indicator with the most dramatic change in this category was *listing my options before making a decision*, with an increase of .58. Other indicators for which large positive changes were reported were *keeping accurate and useful records* in the useful/marketable skills category (1.34), and *making a presentation* (1.03) in the communication category of life skills. A particular achievement in 2006 was the indicator of "Plan to use my Financial Resources" (2.25).

c. **Source of Funding:** Smith-Lever 3(b)(c), state funds, county funds

d. **Scope of Impact:** State specific

**Key Theme – Workforce Preparation – Youth and Adult**  
**Key Theme – Other (Goal 4: Forest Resource Management)**

- a. Research indicates that children who attend high quality after school programs have better peer relations, emotional adjustment, conflict resolution skills, grades and conduct in school compared to their peers who are not involved in after school programs (National Institute on Out-of-School Time Center for Research 2002). Many local youth are not involved in after school sports or other extra curricular activities, and may be spending unsupervised time in high-risk settings. They also may not have had the opportunity to spend time in a forest setting to learn about forest ecosystems, our local forest economy and to develop an appreciation for the environment in which we live. WSU provides 4-H youth leadership programs in 16 counties through the Secure Rural Schools and Community Self-Determination Act of 2000. Those after school programs teach job skills to youth as part of forestry education.
- b. **Impact:** Results have been dramatic. The Forest Service has given the 4-H project a regional award for “Caring for the Land and its People.” They are so impressed with the program that they are advocating in Washington, D.C. for a national model in partnership with the U.S. Fish and Wildlife Service. Over 90% of participants indicate significant gain in self-confidence, problem solving and other life skills. Gang members have turned themselves around and left their gangs to be involved in the 4-H forestry education after school program. Parents and teachers indicate dramatic changes in students with regards to their interest in school, respect for authority and having a sense of direction again. Several students have gone from being failing students and not attending school with any regularity to being model students with GPA’s of 3.0 and above. In 2006, participant attendance at school has improved for 87% of the students in the project. This is an extremely important predictor of student success since students must be in school to learn. Some students have expressed an interest in natural resource education and taken jobs with the US Forest Service, and a couple more have graduated from high school and are now attending WSU. Youth participants have increased their knowledge of forest ecosystems, local forest economy, forest stewardship and management practices; developed an enhancement of critical thinking skills; discovered a sense of pride in a “job well done”; expressed a desire for higher education; acquired an appreciation of the unique environment in which they live and a sense of community; gained global perspectives by having opportunities to act on a local level; and gained productive and wholesome use of time both in and out of school.
- c. **Source of Funding:** Smith-Lever 3(b)(c), state funds, Secure Rural Schools and Community Self-Determination Act of 2000
- d. **Scope of Impact:** State specific

**Key Theme – Leadership Training and Development**

- a. The Washington State 4-H Strategic Plan was the foundation of the Volunteer Development Action Team (VDAT). The Washington 4-H Program boasts 6,825 adult volunteers and 917 youth volunteers. In order to effectively serve as leaders of enrolled youth, these volunteers need orientation, leadership training, and basic knowledge and understanding of the 4-H youth development program in addition to the core competencies that exist at the national level for 4-H professionals. Limited budgets necessitate consideration of alternative distance delivery methods for training 4-H professionals and volunteers. Employing appropriate distance delivery methods for 4-H volunteer training can reduce the duplication of efforts by individual counties and allow county 4-H professionals time to pursue other tasks.

- b. Impact:** To increase the effectiveness of volunteer training, the VDAT has produced seven training modules available online. Statewide training events have been conducted for professional faculty and staff and a uniform training methodology is being implemented across Washington. In 2006, 4,254 adult volunteers participated in training at the county, district, and state levels and were direct recipients of the VDAT work. Better-trained volunteers are better prepared to meet the needs of an increasingly diverse and challenged youth population. The adult volunteers trained in Washington State have nearly doubled (2,703 to 4,254) in the past two years.

Additionally in 2006, the VDAT joined with 4-H Volunteer Development Specialists in the Western Region and developed a full lesson web-based volunteer orientation package. The system provides direct reporting back to county offices for contact and follow-up. This is the first sort of web-Based program developed in the United States. All 13 western states are participating in the web-based lessons.

- c. Source of Funding:** Smith-Lever 3(b)(c), state funds, county funds, private donors
- d. Scope of Impact:** State specific

### **Key Theme – Children, Youth and Families at Risk**

- a.** Agencies serving youth grades five through twelve are in agreement that their students/clients present a set of needs significantly different than those of previous decades. A survey of school counselors, agency staff and ministers attribute the following issues as causes for lack of success in school: problems related to alcohol and drug abuse, teen pregnancy, low self-esteem, poor skill levels in communication and decision making, as well as a deterioration of family bonds. The Washington 4-H adventure education program, 4-H Challenge, is a complex system of 11 site-based challenge courses, many portable challenge programs, two active rock climbing programs, a pilot long boating program, flat water canoeing, and backpacking.
- b. Impact:** In 2006, 8,880 Washington youth participated in Challenge activities. Typical outcomes included safer schools, more positive and cooperative school climates, youth that felt stronger positive connections to classmates and their schools, improved teamwork and collaboration, and improved experiential education skills of professional school teachers.

Over a 7-month season, 531 evaluations were collected.

- 80% of participants reported an average of a 12% increase in the 15 indicators measured.
  - Participants reported a 13% improvement in decision-making skill; 12% improvement in communication skills' 14% improvement in leadership skills; 12% improvement in problem solving skills' 12% improvement in teamwork skills, 10% improvement in personal responsibility.
- c. Source of Funding:** Smith-Lever 3(b)(c), state funds, county funds, private donations
- d. Scope of Impact:** State specific

### **Key Theme: Workforce Preparation - Youth and Adult**

- a.** The Center for Youth Workforce Preparation engages middle and high school-age students and the greater community in informal technology education. Additionally, 4-H programs are being

expanded in the areas of science, mathematics and technology through projects, activities and events that engage children at an early age and develop community support by involving people outside formal channels of education. The 4-H program is preparing students to become technology professionals by providing high quality undergraduate and graduate education in electrical and mechanical engineering, computing and the sciences. The ultimate goal is to graduate 1,033 students in engineering and science fields by the year 2010.

- b. Impacts:** Middle school and high school specific training has been conducted for 126 young people in collaboration with local community partners. These partners include State Of Washington Employment Security, Educational Services Districts, and local science and engineering firms. The training has also included “first-job” skills training and has resulted in increased employment rates for teens seeking part-time employment.

The WSU Vancouver Teen Works Program works in collaboration with the Clark County 4-H Program. To date this association has resulted in the re-starting of the Clark County 4-H Teen Leadership Program (Ambassadors).

- c. Source of Funding:** Smith-Lever 3(b)(c), state

- d. Scope of impact:** State specific

**Key Theme:** Workforce Preparation – Youth and Adult

- a.** Washington State 4-H has a well-established history of leadership in technology advancement and skill building for youth. WE have established computer labs around Washington operated by young people, developed a youth-built computer program where 4-Hers build computers from component parts and then donate them to needy youth and community service organizations and we have an active mobile technology van which allows internet work up on 16 lap tops from any site in Washington.

- b. Impact:** In 2006, Washington 4-H teamed with the Center to Bridge the Digital Divide and traveled to Rwanda to provide ICT training for secondary students at four (4) schools in the greater Kigali area.

- Twenty (20) Kigali were trained in computer technical skills and their schools received Internet connectivity as a direct result of this program.
- Four 4-H youth and their adult chaperone taught the participating Rwandan youth how to teach their newly gained skills to 45 additional youth.
- The Ministry of Education in Rwanda has cited this project as a way to keep Rwandan youth in school, complete their education, and strengthen their entrepreneurship skills.

- c. Source of Funding:** Smith-Lever 3(b)(c), state, donations

- d. Scope of Impact:** International

**Key Theme:** Character/Ethics Education

**Key Theme:** Other (Goal 1: Animal Production Efficiency)

- a.** Many of the defects in animal carcasses are the result of management and care given to animals before they reach the packing plant. Therefore, meat packing plants and consumers are holding producers (both youth and adults) responsible for supplying humane produced animals that are free of drug or chemical residues and physical hazards. Youth producers must

learn that there are economic incentives as well as moral and ethical responsibilities to humanely produce wholesome, high quality food products for consumers. Because youth project show animals sometimes receive less than optimal care, they may have higher incidence of disease, and may be more likely to contain illegal residues than other meat animals. Therefore, it is important to educate both youth and adult volunteers about proper care and management and its impact on product quality as youth raised animals enter the meat supply.

**b. Impact:** A uniform Animal Quality Assurance program and reporting system first implemented in 2003 continued to be used in 2006 across Washington State for all 4-H youth producing livestock that will enter the meat system. This program includes signing the Exhibitor Code of Ethics.

- One hundred percent of 4-H youth who exhibit market animals at Washington Fairs signed an Exhibitor Code of Ethics outlining responsibility for the proper care and treatment of their animals, the production of wholesome food, and the development of sound ethical behavior in themselves and others.
- 4-H youth demonstrated their skills in raising a market animal project that meets or exceeds consumer expectations for high quality, safe food products.
- Only one pig was prevented from show and sale because the medication withdrawal time had not been completed prior to a market stock sale. With 4-H youth producing 20% of the entire hog market consumed in Washington State, this is a remarkable level of compliance with industry standards.
- 100% of 724 market stock exhibitors exhibiting at the Benton Franklin Fair and the Columbia Basin Junior Livestock Show completed Market Animal Health Records. They recorded animal health products and medicated feeds used and certified that no prohibited proteins were fed during the production of their market animal projects. This practice change requires they read and record information from both drug and feed labels to help ensure they are producing healthy, safe animal products for consumers and demonstrates knowledge of quality assurance principles to complete their Market Animal Health Records, preventing possible fines and/or criminal prosecution for violative drug residues.
- In Southeast Washington over \$800,000 was returned directly to 4-H members who marketed their project animals after completing the Animal Quality Assurance Program.

**c. Source of Funding:** Smith-Lever 3(b)(c), state, private donation

**d. Scope of Impact:** State specific

### **Key Theme – Leadership Training and Development**

**a.** WSU Extension 4-H youth development redirected limited resources to enhance its commitment to ongoing youth programs that are both volunteer-based and directly delivered by Extension educators. In 2006, 4,254 adult volunteers received one or more 4-H training experiences. That figure represents fully 60 percent (a double from 2005) of the adult volunteer base participating in training opportunities. To improve both the quality and quantity of training opportunities the WSU Extension 4-H initiated a strengthening professional development system for Extension educators in 2003. In 2006, second year of the three-year training cycle, 2004 professional offerings included: Programming with Schools and using the EALR's Competency; Partnerships; Basic 4-H Orientation Competency: Organizational Systems, Learning Strategies, and Adult and Youth Development; Logic Model Training (via technology) Competency: Learning Strategies; Program Days: Delegation, Competency: Adult



Development; "Volunteer Training Modules" Competency: Volunteerism; "Risk Management"; Competency: Organizational Systems; "Working with Children with Special Needs"; and Competency: Youth Development.

- b. **Impact:** New faculty and staff have reported that the 4-H orientation increased their knowledge of the 4-H program nationally and statewide, improved their skills in teaching techniques, enhanced their understanding of experiential education and clarified their risk management responsibilities. The Welcome Packets and Points of Contact systems have facilitated the new personnel in increasing their capacity to seek out knowledge and feel a part of the state 4-H program. Other long-term outcomes will be forthcoming as this project continues. Short-term and long-term evaluations are planned for the professional development trainings and the committees managing the 4-H program.
- c. **Source of Funding:** Smith-Lever 3(b)(c), state, county, private donors
- d. **Scope of Impact:** State specific; Nationwide and International

**Key Theme:** Leadership and Development Diversity

- a. The 4-H Youth Development program has served as a leadership preparation program since its inception over 100 years ago. Youth gain knowledge in specific subject matter from textile science to engineering, from human development to plant science as well as practice skills in communications, leadership, and decision-making. Most recently in Washington State 4-H opportunities to learn and practice cultural competencies needed to interact, live and work in an increasingly diverse world have been provided for youth and volunteers. The developing Leaders for a Diverse World Summer 4-H Teen event was held June 23-25, 2006 at the Lake Wenatchee YMCA Camp near Leavenworth, WA. Youth were involved in the planning, implementation and evaluation of the event. The goals of the event were to increase leadership skills in communicating and working with others, increase the ability to recognize and welcome human differences, and to enhance self-responsibility skills.
- b. **Impact:** The WSU Life Skills Evaluation System was used to gather demographic information and assess life skills learned in the program. Of the fifty-three youth who attended, fifty completed the evaluation for a response rate of 94%.
  - Eighty-four percent (84%) of the participants self reported that they made gains in communication skills, the ability to accept differences, leadership and self-responsibility.
  - Teens also gained skills in communication, specifically learning how to clearly state thoughts, feelings and ideas to others and how to listen carefully to what others say.
  - In the area of accepting differences youth reported growth in treating people who are different than them with respect. And lastly, teens gained skills in doing what is right for them when in a group.
- c. **Source of Funding:** Smith-Lever 3(b)(c), state, county, donation, participant fees.
- d. **Scope of Impact:** State Specific

**Key Theme – Community Development**

**Key Theme – Leadership Training and Development**

- a. The Natural Resources Leadership Academy (NRLA) is managed by Washington State University's Division of Governmental Studies and Services (DGSS), a jointly-sponsored

endeavor of the College of Liberal Arts and WSU Extension. NRLA offers training to state, federal, tribal and local agencies in four core curriculum areas in multiple formats which address both agency training needs and individual capacity development: stewardship, leadership, communication, and collaborative problem solving.

- b. **Impact:** Federal, state, and local natural resource enforcement agencies identify themselves as ineffective in resource protection using primarily enforcement methods. With the National Marine Fisheries Enforcement area leader, a team of Extension educators is developing a curriculum to train natural resource enforcement officials in collaborative methods. Efforts are underway to involve tribal governments, federal agencies, state agencies and non profits. In 2006, the program offered eight highly successful programming sessions with in more than 350 people in attendance from Washington and Oregon.
- c. **Source of Funding:** Smith-Lever 3(b)(c), state, county
- d. **Scope of Impact:** Multi-state ( WA, OR)

**Key Theme – Community Development**

**Key Theme – Workforce Preparation**

**Key Theme – Jobs/Employment**

- a. The Washington Manufacturing Services (WMS), is a not-for-profit organization established in 1996 as the State's "manufacturing extension program." WMS assists Washington's small manufacturers to enhance their viability and profitability through consultation on plant modernization, product improvement, business efficiencies, and workforce education. The result is creation and retention of jobs and improved competitiveness.
- b. **Impact:** In partnership with WMS, WSU Extension's food processing specialist worked with 109 different businesses in the Northwest to provide assistance in market analysis and development, solving quality problems, regulatory compliance, and resolving food safety issues. This partnership also helped create 12 new enterprises and retain and/or expansion of an additional 19 businesses.
- c. **Source of Funding:** Smith-Lever 3(b)(c), state, county
- d. **Scope of Impact:** State specific

**Key Theme – Community Development**

**Key Theme – Impact of Change on Rural Communities**

- a. Through The Certified Public Officials Program (CPO) is collaborative partnership with agencies committed to strengthening and promoting the leadership capacity of elected and appointed county officials in Washington State. The program provides local officials with professional development opportunities that accentuate the vital personal skills and abilities needed to facilitate positive change and innovation within their counties. Those officials who complete the program will become a "Certified Public Official."
- b. **Impact:** Since 2002 the CPO program has:
  - Provided professional development to public officials enhancing their leadership and decision-making abilities.
  - Increased ability of community leaders to build collaborative relationships and strengthen citizen participation in local government.

- Maximizes the limited education/training dollars available to staff in 39 Washington counties.
- 730 county officials have attended at least one offering of the program and 45 have graduated.

c. **Source of Funding:** Smith-Lever 3(b)(c), state, county

d. **Scope of Impact:** State specific

**Key Theme – Community Development**

**Key Theme – Impact of Change on Rural Communities**

a. Through its activities in Leadership Development for Public Decision Making, WSU Extension provided education to community members and leaders across Washington State. Notable ongoing Extension programs include the Partnership for Rural Improvement (PRI), and the Horizon's project. Now in its 32<sup>nd</sup> year, the PRI is a consortium of four community colleges and WSU Extension. The consortium's mission is to bring the resources of participating institutions to bear on issues and opportunities of importance in Washington communities by expanding business and community education program offerings through innovative partnerships with recognized community groups.

b. **Impact:** Through the efforts of three partners and 150+ volunteers, Leadership Skagit looking towards its fifth year has 90 graduates who enhanced their leadership skills and studied different aspects of local issues. To practice their new skills, the students partner with local non-profits to complete needed community service projects. The twenty projects (five each year) have been completed with a combined value (cash and in-kind donations) of over \$150,000. A full class is expected to enroll for 2007.

c. **Source of Funding:** Smith-Lever 3(b)(c), state, county

d. **Scope of Impact:** State specific

**Key Theme – Community Development**

**Key Theme – Impact of Change on Rural Communities**

a. "Horizons" is a community leadership program aimed at reducing poverty in small rural and reservation communities (population less than 5,000) faced with economic decline and demographic change. The program's goal is to help communities understand poverty, help them commit to action to change it, and then bring about lasting change in their community. X At the end of the pilot, recommendations from communities, delivery organizations, evaluators and Foundation staff helped to shape the expanded and improved Horizons program, launched in August 2006. Designed as an 18-month initiative that will work with about 200 communities in Minnesota, Iowa, North Dakota, South Dakota, Montana, Idaho and Washington, the program is relying on WSU Extension as one of the eight regional institutions to provide training, consulting and technical support to Horizons communities. X Upon acceptance into the Horizons program, each of the 23 WA Communities is establishing a Project Steering committee (comprised of a diverse membership, representative of their community) and recruiting community members as Study Circle Facilitators. Study Circles is the second segment of the program.

b. **Impact:** Through formal programming efforts in 2006, the project worked with 23 communities reaching 1,200 citizens through local community building efforts. Twenty-three communities that were accepted into the project established local Steering committees. Within the 23

communities, more than 184 community residents are being recruited to serve as Community Facilitators, delivering the Study Circles curriculum entitled, Thriving Communities: Working together to move from poverty to prosperity for all.

- c. **Source of Funding:** Smith-Lever 3(b)(c), state, county
- d. **Scope of Impact:** State specific

**Key Theme – Community Development**

**Key Theme – Impact of Change on Rural Communities**

**Key Theme – Workforce Development**

- a. The WSU Learning Centers' Full Immersion Spanish program is aimed at preparing people in the helping professions to communicate with native speakers of Spanish. The Latino population in Washington has doubled over the last 10 years. Many are newcomers who do not speak English. The ability to speak, read, and write basic Spanish has never been greater for school, health care, law enforcement, and other professions. As the Spanish speaking population continues to grow more efforts are needed to address their specific needs. The most critical need is the ability to communicate. The Full Immersion Spanish Institute presents an opportunity for people working with Spanish speaking clients to improve their Spanish speaking skills and gain insight and appreciation of the culture.
- b. The Learning Centers' "intensive Spanish" program has expanded to offering courses at 5 location throughout the state. To date the program has graduated more than 660 students since its inception in 1998.
- c. **Source of Funding:** Smith-Lever 3(b)(c), state, county
- d. **Scope of Impact:** State specific

**Key Theme – Jobs/Employment**

**Key Theme – Other (Management Goal: Information Technologies)**

- a. The WSU Center to Bridge the Digital Divide (CBDD) helps people, communities and institutions successfully access and apply information communication technologies to achieve these and other learning and development objectives. Specifically, CBDD facilitates collaborative partnerships; provides educational outreach, research and policy guidance resulting in the development of rural telework content for distance delivery to business and community leaders.
- b. **Impact:** The CBDD's e-work program facilitated productive collaboration among business and economic development leaders within a seven-county region resulting in the creation of a research-based regional strategy to encourage development of new local job opportunities through e-work. This program has secured funding to continue training and technical assistance 100 living-wage jobs have been created. This project is built on three years of previous work to create information-based jobs in rural Washington. At the conclusion of this project, the number of information-based jobs in participating communities has increased by over 200.
- c. **Source of Funding:** Smith-Lever 3(b)(c), state funds, USDA CSREES Rural Telework Project
- d. **Scope of Impact:** State specific

**Key Theme - Community Development**  
**Key Theme – Impact of Change on Rural Communities**  
**Key Theme – Workforce Development**

- a. The ten Washington State University Learning Centers that cover 23 counties in the state have goals to: increase access to higher education for place-bound adults; assist in the recruitment of students of color, high achieving freshmen and transfer students; and to respond to both the credit and continuing educational needs of the communities they serve. Learning Centers combine the “high tech” delivery of distance education programs with the “high touch” approach of on-site staff.
- b. Impact: Community education programs in Washington enrolled 1,209 students in 133 personal enrichment workshops, had contacts with more than 24,500 students or potential students at the Learning Centers and had more than 19,300 recruiting contacts with potential students and parents.
- c. Source of Federal Funding: Smith-Lever 3b and c, State, County
- d. Scope of Impact: State specific

**Key Theme - Community Development**  
**Key Theme – Impact of Change on Rural Communities**

- a. The Division of Governmental Studies and Services (DGSS) is jointly supported by the College of Liberal Arts and WSU Extension as an interdisciplinary unit engaged in active university outreach. DGSS strives to provide graduate training in applied social science research, and to deliver high quality and respected research products to client agencies and organizations. In the past year DGSS conducted a study with the Association of Fire Chiefs and Fire Commissioners to examine fire agency funding patterns and needs, the services provided by fire agencies, and citizen perceptions of agencies, services, and funding issues.
- b. Impact: The two organizations learned that their assumptions regarding fire agency funding mechanisms were not supported by either the realities of agency funding or by citizen support for new funding initiatives. The two associations adopted new policies with regard to agency funding initiatives, and have inaugurated a new resource to assist agencies in the pursuit of funding using the observations and analyses from the surveys.
- c. **Source of Funding:** Smith-Lever 3(b)(c), state, county
- d. **Scope of Impact:** State specific

**Management Goal: *Multicultural and Diversity Issues***

**Overview:**

Washington State University Extension is a member of the Change Agent States for Diversity and Engagement (CASD/E) Consortium. As part of this process, teams were developed to guide the organization in developing structures that support outreach to a more diverse audience, increase the diversity of our faculty and staff, develop focused outreach to Latino(a) audiences, and support professional development and increased cultural competency of all Extension personnel. Concurrent with this effort, an increasing array of important programming is being conducted statewide. The following summarizes some of these activities and the outcomes associated with the programs.

The International 4-H Youth Exchange (IFYE) program provides unique global education experiences provide youth/families the opportunity to host high school students from Japan and former Russian Bloc countries for short-term, summer or long term, yearlong home stays. Annually, about 60 families participate in this exchange program. Washington youth travel to Japan for a 4-week home stay.

- Youth have demonstrated growth in accepting differences, communication and concern for others as normal outcomes for participants. Nearly all host families maintain long-term contact with their exchange student after they return home.

Through the Center to Bridge the Digital Divide partnership, Washington State 4-H trained and sent four 4-H youth and two adult volunteers to Rwanda to provide computer technology training for Rwandan youth in 2005. In 2006 WSUE hosted four Rwandan secondary school students to work with local staff and youth on technology projects as well as sending four WA youth to Rwanda.

- This exchange resulted in long term friendships and collaboration between Washington and Rwandan youth;
- Rwandan and WA youth gaining significantly expanded technology skills and
- Rwandan and WA youth gaining training skills.

In ever increasing numbers, the 4-H program is attracting youth who require special accommodation. In addition to inclusion in existing 4-H programs, both Walla Walla and Chelan counties have horse camps for youth with disabilities.

- Thirty-two youth participating in these camps demonstrated increased physical mastery, confidence, and self-esteem.
- Parents and caregivers report longer attention spans and better listening and communication skills of the youth who participate.
- Physicians and physical therapists report increased balance and muscle tone in riders.

Culturally diverse youth and families are often relatively new arrivals to the communities in which they live. As a result, they may be marginalized from the mainstream of community life, and may have limited access to the full range of resources available to local residents. Cultivating Community Strengths Together (CCST) is designed to engage culturally diverse communities in projects and partnerships that strengthen local youth and families. By focusing on leadership and life skill building, Extension mobilizes teams of youth and adults who work together to bridge disconnections across age, income and cultural groups in their communities. The intent of CCST projects is to provide diverse cultural opportunities for all community residents, and to foster an appreciation for diversity in communities across the state.

- In Mason County, youth participating in the CCST afterschool program improved their social skills and appropriate behavior/conduct and reported moderate to high levels of school attachment, life skills and self-worth, and low levels of conduct problems.
- Fifty percent said they were doing better in school since coming to CCST activities.
- In Spokane, youth cited increases in skills, positive attitude, sociability and engagement as behavior changes resulting from participation in CCST. One-third of respondents indicated their grades were better since starting participation in CCST activities.
- Fifty percent of Mason County youth reported differences in family life with 45 percent citing improvement in family communication as a positive change. Increases in family harmony (27%) and family involvement (18%) were also reported.
- Spokane youth described family impacts in terms of increases in common ground, parental approval of skills learned in CCST, and increased family involvement.

The 4-H Youth Development program has helped youth gain knowledge in specific subject matter areas such as textile science, engineering, human development, and plant science. The program also allows youth to practice skills in communications, leadership and decision making. The Developing Leaders for a Diverse World Summer 4-H Teen event focused on learning and practicing cultural competencies needed to interact, live and work in an increasingly diverse world

- Eighty-four percent (84%) of the participants self reported that they made gains in the life skills of communication, accepting differences, leadership and self- responsibility.
- Youth reported growth in treating people who are different than them with respect.
- Teens also demonstrated skill development in group dynamics and behavior.

The greatest population density and diversity in Washington State is in the greater Seattle area. The Developing Life Skills for Youth program sponsored a summer camp in neighborhoods with large minority populations.

- 75% of children and youth reported increased respect, responsibility, communication, and team building skills.
- Through the VOICE Program, youth demonstrated responsibility and communication during volunteer activities.

The Colville Reservation Tribal Advisory Committee identified the need to increase educational programming on the Colville Reservation related to agriculture and 4-H. Funding was secured to addressing invasive weeds that were impacting Tribal grasslands ecosystems that support both livestock and wildlife on the reservation.

- Biological control agents were introduced on the Reservation leading to reduced densities of invasive weeds.
- Visual estimations confirm that at least 20,000 acres of grasslands have reverted to a healthier condition of grasses and forbs, versus the previous monoculture of diffuse knapweed.

In collaboration with the South Puget Intertribal Planning Agency (SPIPA), WSU Thurston County Extension developed a leadership training program for emerging tribal leaders.

- Results at the mid point are very encouraging. Participants consistently report employing skills they have learned in the Academy on the job and as a group.
- Utilization of the WebCT 6 platform has steadily increased since the first session.

The Strengthening Families Program for Parents and Youth 10-14 Years has been delivered in Spanish in several locations in Washington.

- Adult program participants reported statistically significant improvements in all intervention-targeted behaviors.
- Participants reported improvement in daily household routines such as getting children to do chores and homework.
- There was a significant increase in numbers of parents speaking regularly and specifically with their children about their expectations regarding use of substances such as alcohol, tobacco, and drugs
- Youth program participants statistically significant improvement in family risk prevention and protective factors and in their peer resistance skills.

WSU Extension personnel participated in a number of professional development activities designed to improve their cultural competency. The "Developing Culturally Competent Programming" training series was piloted in 2006. The series of workshops conducted via face to face trainings and video

conferencing were based on the WSU Extension's Cultural Competencies. Participants reported increase in knowledge areas and an increase in adapting their programs to meet the needs of diverse audiences.

Community members and extension personnel participated in intensive Spanish language classes in four locations across the state. Evaluations indicate increased ability to communicate with Latino(a) students and their non-English speaking parents. Additionally, the training helped community service workers better present social and nutrition services to low-income Latinos; and increased business for retail owners/managers who now can better communicate with Spanish-speaking customers.

**2. SUMMARY: SOURCES OF FUNDING AND FTE FOR GOALS 1, 2, 3, 4, and 5**

<b>Sources of Funding and FTE For Goal 1-5</b>	
FTE Smith-Lever 3b and 3c	27.012
FTE Smith-Lever 3d	21.085
Federal Extension (\$)	\$4,977,1000
Non-Federal (\$)	\$31,059,792
Other Federal (\$)	\$8,887,500
<b>TOTAL (\$)</b>	<b>\$44,924,392</b>

**B. STAKEHOLDER INPUT PROCESS**

Washington State University Extension's planning process was built from a major initiative in 1998 when four task forces were formed to define the University's role in addressing significant issues facing the state. In 2006, WSU Extension collaborated with the College of Agricultural, Human and Natural Resource Sciences to develop a new legislative funding request. Listening sessions were held throughout the state prior to the development of this initiative. The Unified Agricultural Initiative had very broad-based support from agricultural groups across the state with virtually every major commodity group endorsing the proposal. Input was also provided by the College of Agricultural, Human, and Natural Resource Sciences' citizen advisory council. This council is made up of representatives from the agriculture industry, county government, 4-H volunteers, families and businesses.

In addition, a private consulting firm Educational Marketing Group (EMG) was retained by WSU Extension. EMG conducted a thorough analysis of WSU Extension's position within the educational marketplace and the societal perception of Extension. Focus groups and tours were conducted in December through March. Stakeholder input was obtained via an online survey. Reports from EMG were used to shape the Plan of Work 2007-2011.

All county offices have an advisory system. Most have formal committees that meet regularly, and all have been encouraged to do so. These committees represent the makeup of the constituents in the county, with specific efforts to obtain input from typically under-represented groups. When it is difficult to obtain formal input from such constituents because they do not want to participate in a committee, a system of informal input is used. County Directors also obtain input from County Commissioners, personal contacts, local agencies and organizations, and through the use of key people in that community. County Directors were surveyed in September 2005 as to their participation via formal membership in local economic development entities. Close to two-thirds active seek stakeholder input via organized structures.

During 2006, WSU Extension conducted a strategic planning exercise. This culminated with the creation of the WSU Extension Strategic Framework document. This document is closely aligned with the federal plan of work and with the WSU the Strategic Plan. In late 2006, metrics



and benchmarks were developed around each goal in the strategic framework. These will be monitored and evaluated to assure positive movement toward goals and strategic initiatives.

In 2004 WSU Extension launched the “Friends of Extension” Information Network, <http://ext.wsu.edu/ce.cahe/administration/FriendsOfExtension.pdf>, to build a cadre of local clientele who are willing to express support for Washington State University. The Friends of Extension is informed of issues that may positively or negatively impact Extension’s ability to deliver quality research-based educational programs. They then advocate on behalf of WSU Extension with decision makers. One hundred forty three individuals have been named and are engaged in a stakeholder input process.

### **C. PROGRAM REVIEW PROCESS**

No significant changes in the program review processes since the 5-Year Plan of Work.

### **D. EVALUATION OF THE SUCCESS OF MULTISTATE AND JOINT ACTIVITIES**

Washington State University Extension continues to address issues identified in the federal plan of action and document significant impacts as the result of collaborations with sister institutions within the region and due to integration of research and extension programs. Because of past budget limitations, the WSU Agricultural Research Center now focuses primarily on agricultural and food system research. Therefore, integrated programs jointly supported by Smith-Lever 3(b)(c) and Hatch funds are almost entirely directed toward agricultural issues. While the human sciences continue to be a very critical component of WSU Extension’s portfolio of programs and exhibit significant integration with research, these programs are not generally jointly funded by Smith-Lever and Hatch funds. Multistate programming includes topics related to agricultural sustainability and productivity, human health, public safety and environmental quality. Planned multi-state programs include efforts related to potato production, risk management, water quality, forestry, disease prevention (Germ City), sustainable agriculture, and public safety. Whereas, planned joint research and extension activities include forestry, sustainable agriculture, wood materials engineering, Integrated Pest Management, and weed control.

Germ City is based on an innovative approach encouraging regular hand washing as a means of preventing communicable disease transmission that leads to the deaths of 5000 persons per year in the US. The program is has been delivered to youth and adults of all walks of life through schools and other public forums. This program has grown to include 18 states with additional inquiries coming from the United Kingdom, China, and the Philippines. The impacts of this program were evaluated in ten sites across five states (WA, AL, HI, WV, and ID). This evaluation demonstrated sustained behavior change among youth four to six weeks after instruction. This included a significant improvement in hand washing before meals and enhanced awareness of the importance of personal hygiene as it relates to food safety.

There is a long and productive record of collaboration between states in the region addressing critical forestry issues such as sustainable forestry management, fire resistant strategies, and protection of watersheds and wildlife habitat. Extension foresters from Washington collaborated with colleagues from Oregon to develop and deliver OSU Extension Tree School leading to improved reforestation practices. In collaboration with the University of Idaho, Oregon State University, the University of Montana, and the University of Washington, the NW Forest Technology Forest Technology Program was developed to improve the rate of adoption of new forestry technologies leading to improved forestry management, environmental services, business planning, and enhanced public and private partnerships. Additionally, collaboration between Washington and Oregon has resulted in numerous joint publications (produced at a

rate of 3 per year) related to woodland fish and wildlife management. Over 43,000 publications have now been distributed across the region. Finally, extension foresters from WA, ID, OR, CA, NC, AK, CO, GA, AZ, UT, MT, and NV recently formed a Western Coordinating Committee (WCC1003) to stimulate collaboration and to coordinate extension educational programs in the region.

WSU Extension is the home of the Western Center for Risk Management Education <http://westrme.wsu.edu/>. The Center continues to enhance delivery and effectiveness of risk management training for agricultural producers in the western region. To accomplish this goal, the Center works closely with western Land Grant Universities and other agencies to facilitate open communication among parties interested in developing and delivering agricultural risk management training and by supporting the development and delivery of appropriate curricula, training materials and professional development programs for educational professionals.

The Western Regional Institute for Community Oriented Public Safety (WRICOPS) provides an integrated approach to adoption of community policing philosophies throughout a five-state region (WA, ID, MT, SD, WY). WRICOPS advances innovative practices related to law enforcement practices and program analyses. Some examples of WRICOPS outcomes are listed below.

- Assisted the sheriff of Yakima County, Washington in defining goals and objectives leading to enhanced law enforcement efficiency and public relations.
- Assisted the sheriff in Ada County, Idaho in identifying and implementing organizational changes that have led to enhanced delivery of law enforcement services and improved problem solving within the community.
- Developed educational materials to help local governments understand how to effectively cope with crises such as Hurricane Katrina.

Long-standing collaborations have supported effective delivery of educational programming leading to more sustainable and profitable potato production in the region. In concert with the University of Idaho, and Oregon State University, multiple research and demonstration plots have been established on producer-owned properties. These generate important information for local growers including the value of available cultivars, cultural management, and other technologies. Along with research and demonstrations, the three states also actively collaborate in the development and delivery of educational conferences and jointly seek and secure extramural funding. Outcomes from these collaborations include:

- Release of three new potato varieties.
- 30% of the total acreage in potatoes is now planted to cultivars evaluated by the multi-state variety trial program.
- High degree of participation in joint educational activities (200-350 producers attending each of three regional symposia).

The Center for Sustaining Agriculture and Natural Resources (<http://csanr.wsu.edu/>) integrates research and outreach and collaborates effectively with other western states. The Center conducts and funds research and extension programs that help create local food systems, support small-scale and biological intensive and organic farming, assist farmers in reducing the environmental impacts of their operations, and address a myriad of public policy issues. Recently, the Center's Climate Friendly Farming program, with support from the Paul G. Allen Charitable Foundation, provided funding and technical assistance that led to creation of two anaerobic manure digesters in Washington State. These systems provide real-world laboratories to evaluate the effectiveness of these systems as waste reducers and energy generators. Research conducted on digested fiber from these units has resulted in a product that has the potential to replace much of the 80 million tons of peat moss that is used by the

greenhouse industry. This will reduce mining of peat and keep carbon dioxide sequestered in these deposits from being released into the environment.

WSU Extension supports educational programming focused on improving water quality in the region. This is done in concert with the University of Idaho, Oregon State University, the University of Alaska, the Washington Water Research Center, and various state and federal agencies. These entities jointly support research and educational programming in the region. As a direct result of the efforts of this collaboration, citizen involvement in watershed management has expanded, fish and wildlife habitats have been preserved, erosion has been reduced from upland soils, and overall water quality has been enhanced. Long-standing collaboration between NW universities led to application of strategies that reduced the amount of erosion from the hilly farmlands of the Pacific Northwest. As a result, strategies such as direct seeding have been applied throughout much of the region and work is continuing to improve the effectiveness of this process.

The Wood Materials and Engineering Laboratory at WSU integrates research and extension across the region to effectively address issues related to utilization of small-diameter timber. Some preliminary results from this effort include the following:

- Wood/plastic composites are being investigated and work is underway with industries across the region to apply this technology.
- Wood composite work is leading to development of new products that are equivalent to or stronger than those made from mature woods of the same species.
- Processes have been identified to increase the value of wood chips from one manufacturer 25-fold by converting them to wood/plastic composite materials.

#### **E. MULTISTATE EXTENSION ACTIVITIES**

**(See Appendix C Form CSREES-REPT (09/04) Supplement to the Annual Report of Accomplishments and Results Actual Expenditures of Federal Funding for Multistate Extension and Integrated Activities)**

A large number of Extension educators are members of multistate research projects and multistate coordinating committees.

Examples of **multistate** work already highlighted in this year's annual report of accomplishment include:

- Food safety (HAACP)
- Health (Diabetes)
- Agriculture (Risk Management)
- Marine resources (fishing safety)
- Invasive species (mustard cover crops, Spartina)

For the purpose of this year's multistate Extension activities, we would like to highlight our Integrated Pest Management, risk management, potato production, and water quality programs.

IPM: Integrated Pest Management (IPM) programs have been developed jointly by Washington, Oregon, and Idaho to address plant pest issues in the region. In 2006, programs were delivered to cherry producers across the region helping them develop more effective and environmentally-friendly controls of cherry fruit fly through demonstrations, publications, web sites, and presentations. Additionally, WSU Extension personnel worked collaboratively with scientists in other states to develop biological controls for cereal leaf beetle. This led to creation of insectaries and promising early results on cooperating farms.

Risk Management. As previously mentioned, WSU Extension is the host for the Western Center for Risk Management Education. In this capacity, WSU Extension works collaboratively with 13 western states to administer competitive risk management education grants. The Center's Trade Adjustment Assistance (TAA) specialist also works with western states and other TAA Risk Management Education Centers to assure that consistent information is available to farmers about opportunities under this program.

Potato Production: Potato cultivars are collectively identified for inclusion tri-state (OR, ID, WA) and western regional trials by university and industry personnel.. Results from evaluations are widely disseminated in an annual summary document. Results are also available on the web at <http://www.ars.usda.gov/main/docs.htm?docid=3019> and [potatoes.wsu.edu](http://potatoes.wsu.edu). County Extension educators throughout the state are involved in the selection of the cooperating grower trials and in the field days. Each participating state—California, Colorado, Idaho, Oregon, Texas and Washington—is responsible for coordinating the effort, carrying out the trials, and reporting the results. Industry participation in the annual tour of trial locations is excellent and instrumental in making selection of early generation materials to be included in subsequent trials.

Water Quality: The WSU Extension Water Resources Leadership Team is a committee of Extension educators providing statewide leadership, support, and coordination for the water resource educational efforts of WSU Extension. Integrated, multidisciplinary team members represent a wide range of specialty areas and regions throughout the state in addition to their normal Extension responsibilities. The team provides statewide leadership for WSU Extension water quality programs by identifying regional and statewide priority issues and mobilizing resources to address these issues based on our educational roles and capacities. This team works in a very productive partnership with the water quality coordinators from the four Land Grant Institutions, the NRCS Liaison to EPA Region 10, the Agriculture Sector Lead from EPA Region 10, the Extension Liaison to EPA Region 10, the directors of the four state water research institutes, and a representative from EPA's Corvallis Research Lab. The Pacific Northwest Regional Water Quality Program and its impact may be accessed at <http://pnwwaterweb.com/>.

## **F. INTEGRATED RESEARCH AND EXTENSION ACTIVITIES**

**(See Appendix C Form CSREES-REPT (09/04) Supplement to the Annual Report of Accomplishments and Results Actual Expenditures of Federal Funding for Multistate Extension and Integrated Activities)**

A great deal of integrated work is going on in Washington State University Extension. Joint appointments between Extension and the Agricultural Research Center are common. These joint appointment personnel integrate the two missions seamlessly by delivering research-based information that focuses on real problems to the people of the state through Extension education programs. Where appropriate, we have given joint appointments to county-based Extension educators as well. WSU Extension has a multitude of integrated teams of faculty to address issues in both agriculture and human sciences.

Because of the number of joint research and extension appointments and due to the close collaboration between county educators and researchers throughout the state, there are numerous examples of integrated work highlighted in this year's annual report. For the purpose of this year's integrated research and Extension activities, we would like to again highlight our two programs: Integrated Pest Management program and the Center for Sustaining Agriculture and Natural Resources.

Integrated Pest Management: WSU Extension conducts educational programs to maintain and improve agricultural production and a healthy environment by promoting pest management

practices that provide adequate pest control while minimizing the potentially adverse effects of such practices upon people and the environment. Several faculty, including the IPM Coordinator, hold joint research and Extension appointments whose salaries are paid from Smith-Lever 3 (b) and (c) and Hatch Funds. Faculty holding integrated research and Extension appointments are located throughout the state and work together in multidisciplinary teams to address IMP programming needs in the areas of crops and soils, entomology, food science, horticulture and landscape architecture, and plant pathology.

CSANR: In response to rapid and complex changes facing the state, in 1991 the state legislature established the Center for Sustaining Agriculture and Natural Resources (CSANR) at WSU. The mission of the CSANR is to develop and foster agriculture and natural resource management approaches that are economically viable, environmentally sound, and socially acceptable. WSU Extension and the Agricultural Research Center jointly provide financial support to the CSANR.

The CSANR acts as facilitator to bring together interdisciplinary teams, both within WSU and in partnership with other organizations. CSANR has a stakeholder advisory committee with representation from a broad spectrum of interests. The CSANR provides education on emerging issues through conferences and workshops, on-farm testing and applied research, informational materials, a World Wide Web site, satellite broadcasts, a resource library, and personal consultation. Examples of current areas of focus are climate change, alternative farming systems, small-scale and urban agriculture, energy and agriculture, organic farming systems, role of biotechnology, integrated pest management, soil and water quality protection, and farmland preservation. The director's salary is paid from Smith-Lever 3b and c as well as Hatch Funds.

Appendix C

**U.S. Department of Agriculture  
Cooperative State Research, Education, and Extension Service**

**U.S. Department of Agriculture  
Cooperative State Research, Education, and Extension Service  
Supplement to the Annual Report of Accomplishments and Results  
Actual Expenditures of Federal Funding for Multistate Extension and Integrated Activities  
(Attach Brief Summaries)  
Fiscal Year: 2006**

Select

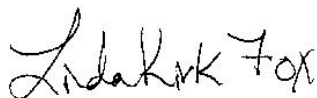
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Institution: Washington State University

State: Washington

	<b>Integrated Activities  (Hatch)</b>	<b>Multistate Extension Activities  (Smith-Lever)</b>	<b>Integrated Activities  (Smith- Lever)</b>
<i>Established Target percent</i>		3%	3%
<i>This FY Allocation (from 1088)</i>		\$4,050,575	\$4,050,575
<i>This FY Target Amount</i>		\$121,517	\$121,517
<b>Title of Planned Program Activity</b>			
Potato		\$17,404	
Risk Management		\$22,129	
Water Quality		\$20,290	\$13,044
Forestry		\$18,904	\$14,722
Germ City		\$12,931	
WRICOPS		\$14,722	
CSANR		\$18,667	\$20,325
WMEL		\$10,535	\$28,647
Weed Research		\$26,596	\$39,631
IPM			\$60,176
<b>Total</b>		<b>\$162,178</b>	<b>\$176,545</b>
<b>Carryover</b>			

**Certification:** I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays represented here accurately reflect allowable expenditures of Federal funds only in satisfying AREERA requirements.



**Linda Kirk Fox, Dean and Director**

March 31, 2007

**Date**