Cooperative Extension System

Annual Report of Accomplishments

2003

University of Idaho Extension
College of Agricultural and Life Sciences

CONTENTS

A. Planned programs

GOAL 1 – AN AGRICULTURAL SYSTEM THAT IS HIGHLY COMPETITIVE IN THE GLOBAL ECONOMY.

Overview

a. Outputs: During 2003, more than 75 individual faculty and staff from the UI College of Agricultural and Life Sciences reported extension activities in programs focusing on competitive and profitable agriculture. These faculty contributed to the delivery of 307 presentations, workshops, field days, or other educational events. Four-hundred forty-one publications reported for this goal include popular articles to scientific articles, and fact sheets to book chapters. In total, participating faculty estimate the total number of contacts with stakeholders at 30,623.

b. Outcomes: UI Extension provided education for a diverse audience of Idaho farmers and ranchers, supporting industries, home horticultural enthusiasts and the green industry. Farmers have learned production characteristics and environmental conditions suited to of new varieties of wheat, barley, forages, and potatoes. They have learned better ways to manage plant pests and diseases in traditional varieties, and about new varieties that are less susceptible to pathogens.

   Cattle producers have a better understanding of carcass traits favored by buyers, have learned to use technology to measure those traits, and have learned management practices that improve desirability of their product, including adoption of methods to select their most profitable animals to retain for breeding. Dairy producers and workers have learned how to increase the productivity and longevity of their cows.

   UI Extension helped producers learn to use new tools and methods, including GIS/GPS instruments and marketing options. GIS/GPS technologies have also been introduced to weed control interests; and the population of residents concerned about invasive species has been expanded through awareness and weed identification education.

c. Impacts: Production of high moisture corn in southeastern Idaho has grown from zero only four years ago into an enterprise valued at nearly $1 million in 2003. In Nez Perce County, cereal schools are known to have improved management on more than 178,000 acres of farmland. Adoption of new pathogen management demonstrated for hops has potential to save this small industry more than $182,000 annually, potentially doubling their profit. Extension's work to initiate and promote direct marketing has provided more profitable marketing options in Idaho's fruit belt.

   Idaho cattle producers have begun marketing through remote services, greatly enhancing the price they receive. Improved management and carcass technologies also have improved the price. Extrapolating benefits reported locally to the $1 billion Idaho industry, widespread adoption of new marketing strategies promises to generate an additional $25,000,000 in annual sales. Producers that improve their feed supplement practices, calving percentages, and weaning weights by applying new knowledge (gained through

Extension) realize further economic benefit.

More than 150 Spanish-speaking farm and dairy workers learned about pesticide safety, animal health, and other management topics previously inaccessible to them. Idaho dairy producers (already among the most productive per cow) estimate significant improvement in production because Spanish-speaking milkers have gained knowledge through training that is potentially worth as much as $185,000 from increased productivity, annually. Improved reproduction efficiency of dairy herds may prove even more valuable over the coming decade.

d. Since developing our 2000-2004 plan of work, University of Idaho Extension has become more focused to address the goals related to agricultural competitiveness. Our plan of work describes outputs (numbers of contacts, classes, publications, etc.) that have all been exceeded, despite a significantly reduced workforce. These outputs are documented in targeted program areas more specific than originally planned.

   Our efforts to document success, however, have shifted to measuring outcomes that result because of our programs. In this regard, we are experiencing success not previously measured. Because of changing customer needs and faculty resources, some issues such as animal and plant production efficiencies have received greater attention since the development of our plan of work; while other topics such as farm financial management have become better integrated across the spectrum of Extension programming.

e. **Grants** invested in Goal 1 include $1,577,481 in total activity[1]; {including $706,790 from USDA agencies; $593,847 from CSREES (of which $423,950 represents various SARE grants, another $169,897 includes competitive grants, goatgrass projects, and IR-4 minor use pesticides); $103, 934 from ARS and $9,000 from Risk Management Agency}. The private sector invested $347,872 in grants for competitive and profitable agriculture, and various commodity commissions invested $347,107. Grants originating from the State and local government represent a $175,712 investment. **Smith-Lever (3) b,c** investment in Goal 1 for 2003 was approximately $1,147,040. **State** appropriations for agricultural research and extension invested approximately $3,746,923 in Goal 1, and investment of **County** funds was approximately $544,481. The **total** program cost for Goal 1 was approximately $7,015,925.

Key Theme – Agricultural Competitiveness

a. Variety Evaluation

   Extension small grain nurseries provide for an objective, uniform, statistically sound evaluation of several winter and spring varieties or advanced lines (candidates for release) in diverse Idaho environments. Extension nurseries also provide performance information critical for the release of varieties for specific areas and management systems. Public varieties and advanced lines, especially from Idaho, **Oregon**, **Washington**, and **Utah** are evaluated, as well as selected submitted private entries. The testing program is statewide in scope and is linked with programs in adjacent states. Similar variety testing projects are

[1] Some amounts reported through this system include investment for multiple years, and are not specific to this reporting year. For specific expenditures, records are maintained with the one-audit protocols.

conducted for dry peas, chickpeas, and several other Idaho legume crops.

In addition to providing the much needed performance data for the wheat entries, the Extension small grain nurseries, located mostly in grower fields, serve as excellent demonstration tools for the transfer of wheat technology to growers and agribusiness personnel. Exposure to new varieties and/or advanced lines, and in some cases market classes, can increase the rate at which the new alternatives are evaluated or adopted by the producer. The nurseries also provide increased exposure of the programs and activities of the Idaho Wheat Commission and Idaho Grain Producer Association.

UI/Nez Perce County Extension Advisory Committee and area seed processors indicate that growers may lose thousands of dollars annually by planting inappropriate varieties. The Nez Perce county extension crops advisory committee has selected variety trials as the number one priority for the UI/Nez Perce county extension office. Growers need information for decision-making.

Variety evaluations lead to enhanced knowledge about varieties that is then transferred to clients. The clients then make informed choices about variety selection, adoption and use. Variety selection will enhance crop performance and may allow decreased inputs of crop protection chemicals. There is an economic benefit to using high producing, disease resistant varieties that stand and harvest well. There is an emphasis on crop quality in cereals that is also part of the variety equation. Most growers are not as concerned about end use quality since they don't get paid for it, but it is important to maintain and expand marketing opportunities. Some recent variety releases include: (winter wheat) Finch, Mohler, Brundage 96, Simon, Chuckar, Clearfirst, Hubbard, Tubbs, ORCF 101, Moreland; (spring wheat) Alturas, Eden, Macon, Hank, Hollis; (barley) Criton, Bob, Creel, AB2323, Tradition. These varieties have the potential to increase economic return when used for the right situations. The use patterns and actual returns from changing varieties is difficult to quantify. The real indicator is the adoption of the varieties.

Cereal schools held in 4 southeastern counties during 2003 met goals in sustainable agricultural practices. They were in Pocatello, Idaho Falls, Ashton, and Preston, Idaho. Several hundred growers acquired new knowledge on production practices.

Cereal producers faced a new insect challenge this year called the Mealy bug. Cereal producers began to notice the new pest in late May and early June. A field tour was organized for the Entomology Specialist to provide initial help to producers. A series of two research plots to determine which chemicals would be effective in controlling the pest were reported at the cereal field day in August. The initial data indicates the mealy bug is very difficult to control, but damage form the pest did not appear as severe as initially feared.

In February 2003 a workshop on cereal and alfalfa production and management was conducted in Boundary County. Thirty-six producers learned about topics such as variety trial results; herbicide persistence; GPS, GIS and Remote Sensing; and commission updates. Pesticide recertification credits were offered through this workshop. Sponsorship from local agribusinesses and state commodity associations funded this workshop

In July, a crop tour was conducted in Boundary County. Nine producers attended the tour, presented by University of Idaho faculty and staff. Articles were compiled to address cereal production issues for the bi-monthly Extension Connections Newsletter. The Mini-Cassia Cereal Tour was held on July 15, 2003. The tour brought producers, marketers, and plant breeders together to discuss variety performance and end-use quality needs.

In cooperation with growers and fieldmen across southern Idaho, Extension located fields for cereal nursery trials. During the growing season, Extension gave four tours to demonstrate varieties and their performance. These field demonstrations fostered discussions, alternative views and diagnosis related to variety selection, nutrient management inputs and disease evaluation. Growers, fieldmen and other industry personnel participated in these programs.

For the 2003 production year, Snake River Cattle contracted 2,480 acres of high moisture corn with 7 growers. They agreed to contract 220 acres of corn silage. Cattle prices went sky high, at least partially due to the Canadian embargo due to Mad Cow Disease. 1,850 acres of the contracted corn was delivered as high moisture corn. The remaining 630 acres was delivered as dry grain corn. Corn hybrid yields were measured on 4 farms. 25 individual weigh-cart samples were recorded.

Extension faculty investigated herbicide application timing and combinations on Round-up Ready corn. A local cooperator planted a field of silage corn using 2 DeKalb RR hybrids. Both pre-emergence and post-emergence herbicide applications were made.

Idaho hop production accounts for 8% to 10% of the U.S. production. Although the acreage is small, the value is high. Total Idaho hop production from 1993 to 1996 averaged over 2.7 million kg, with an on-farm value of more than $10 million dollars, annually. Research-based information concerning the biology and identification of both pest and beneficial insects, and use and effectiveness of various management tools (e.g. biological control) has been delivered to growers, field representatives and county educators, resulting in increased pest management knowledge for these target audiences.

Twin Falls County is the state's leading bean producing county with 662,200 cwt produced. This accounts for nearly 40% of the state's total production. Bean common mosaic (BCM) is one of the world's most serious bean diseases. We have been working on long-term research to identify genetic markers for virus resistance in beans, and have followed with similar research for other been diseases. Results from this research are delivered to stakeholders through bean schools, publications, and field days.

Past program evaluations have indicated that producers find the bean school highly informative, and that it raises their knowledge and awareness of management topics, political issues, and bean market activities. This annual program is assisting growers to make better-informed decisions in bean production that will lead to better profitability and competitiveness in the bean industry, both domestically and internationally.

Harvested alfalfa acreage in Idaho was estimated at 1,120,000 acres in 2002 and

production in 2001 was estimated at 4.37 million tons. In Idaho 79% of the harvested alfalfa is under irrigation and it produces 93% of the tonnage. Since the acreage of alfalfa and other hay has remained quite stable since 1920, the reason for the increased production since 1920 is increased yield of especially alfalfa. Increased production is because growers have adopted new technologies related to improved genetic materials, increase in irrigation on former dry-land areas, and more efficient harvest management and equipment. Effects of soil fertility management are unknown.

For the potato production management project, information was transferred to approximately 4,283 people via 112 presentations. There were 46 newspaper and popular press articles published, 7 Extension publications, and 53 other various publications including book chapters, scientific journal articles, miscellaneous Extension publications, abstracts and proceedings, and research reports.

The Snake River Sugarbeet Conference included general sessions and numerous workshops, including two workshops offered to Spanish Speakers covering sugar beet topics: weed seedling identification and sprayer calibration. An electronic sugarbeet newsletter was created and announced during the Snake River Sugarbeet Conference. This allows mass communication of information to subscribers at no cost to the program. Six issues were published in 2003 to distribute timely information.

By-products of sugarbeet processing have become an immense problem for Amalgamated Sugar Company at all four factories. The University of Idaho has participated on a committee to seek ways for utilization of by-products. A proposal was developed for approval by company executives, and it is now under under consideration.

22 speakers made presentations at 12 individual workshops and 378 sugarbeet growers attended, of which 40 were Spanish speaking. One proceedings, 2 research project reports, 2 multi media articles, 1 Extension publication and 3 interview articles provided Extension and research information to clientele.

Beef Programs

Idaho ranks 15th in the nation in total cattle numbers (1.99 million head), and also has a broad spectrum of producers in diverse production environments. Idaho's beef cattle industry components include cow-calf, stocker, feedlot, and packer. The beef industry ranks in the top three of Idaho's agricultural industries, contributing just less than $1 billion in 2003. Efficient and profitable production of beef cattle is influenced by production, financial, environmental, and marketing factors. Studies have shown that a large percentage of beef producers have not adopted a wide variety of proven technologies and that production efficiency in numerous operations could be improved. Producers are faced with issues that directly impact the profitability of their operations. Some of the major issues include: (1) advancements in technology (animal identification, computer record keeping, etc.) (2) marketing alternatives (traditional, video, web, grids, etc.), (3) environmental regulations (CAFO, AFO, etc.) and public policies, (4) animal health products and protocols, (5) evaluation of herd performance and productivity, and (6) profitability. The University of Idaho Extension Beef Team provides cattle producers with educational opportunities that

address the critical issues facing Idaho's beef cattle industry.

The University of Idaho Extension Beef Team has worked with the state's beef cattle industry and allied industry representatives to develop the "Idaho Beef Quality Assurance" program. The objective of the program is to teach producers how to reduce their losses as identified in the Market Cow and Bull Audit and in the National Beef Quality Audit. The program addresses the following issues: 1) producing a product that meets consumer needs, 2) producing a product that is safe and wholesome, 3) maintaining animal health, 4) improving product quality and desirability, and 5) incorporating best management practices into the production of beef. The program team: 1) provides training to those interested in becoming certified instructors, and 2) provides training for producers across the state. The development team will include certified instructors on the annual review team to review and update materials on an annual basis.

Magic Valley Cattle Association has expressed a need to increase the value of their cattle by marketing calves meeting an implied quality standard. Following discussions with producers, beef industry leaders and University of Idaho Extension faculty members (specialists and extension educators), the UI Cooperative Extension Beef Team developed Beef Quality Assurance (BQA) training curriculum and conducted BQA Train the Trainer workshops. An introduction and overview of the BQA program was presented at the five beef schools. Eleven beef quality assurance (BQA) training and certification sessions reached 169 livestock producers at events held throughout the state of Idaho. These three-hour programs taught producers about the full range of concerns that consumers have on how beef are raised. At each of these sessions participants have evaluated the BQA program and presentations. Results of evaluations have been used to update/refine the BQA materials (booklet, presentations, etc.) provided to participants, including carcass data collected by University of Idaho and **Oregon** State University Extension Educators on 4-H/FFA market beef from seven Idaho and five Oregon counties.

In total, beef quality assurance (BQA) information was shared with clientele at twenty (20) different events. These events included classes, seminars, workshops, and winter beef schools. This educational effort resulted in 963 face-to-face contacts. Beef quality assurance (BQA) information was also disseminated in a variety of publications. Specialists and extension educators wrote a total of nine publications. These publications included: abstracts, proceedings papers, Extension publications, and popular press articles.

Efforts to genetically increase the productive ability of cattle through improved decisions and management of beef producers are the focus of the in beef quality and genetics project. Selection of beef cattle should retain the best animals in the current generation to be parents in the next generation. During winter beef schools, field days and year-end meetings, presentations were given to provide producers with information on: (1) tools to evaluate and identify superior animals, (2) selection tools, (3) breeding programs (4) economically important traits, and (5) trait relationships. Approximately 150 producers were in attendance at these events.

The A to Z Retained Ownership program started in 1992 as a cooperative venture by

cow/calf producers, the Bruneau Cattle Company feedlot, veterinarians, packers, bankers, allied industry representatives and the University of Idaho Cooperative Extension System. The primary goal is to educate and provide information to cow/calf producers on how their cattle perform through the feeding and carcass grading phases. Ranchers participate by enrolling a sample of their cattle (5 - 50 head) in a feeding trial. The calves are pre-conditioned (weaned, vaccinated) on the ranch and delivered to Bruneau Cattle Company feedlot. The feeding trial starts in November and ends in May when the finished cattle are processed at Iowa Beef Processore (IBP, Boise). Owners receive feedlot, carcass and economic information on their calves.

In the 2002-2003 feeding trial, 21 ranches consigned 581 calves (321 steers, 260 heifers). Twenty-one individual ranch reports were prepared and distributed, one feedlot tour and two packing house tours were conducted, two year-end meetings held, and a summary report was published.

Breeding cattle selection continues to be an important part of the production cycle. Ultrasound technology has provided a new tool that producers can use to add another piece of information to use in the selection of breeding animals. Two producers have taken advantage of using ultrasound technology to look at the backfat, intramuscular fat, and loin area of potential breeding animals. In addition to individual producers, the Saler and Shorthorn spring and fall sales have taken advantage of the technology to aide in the marketing of their breeding stock.

Ultrasound evaluation was conducted to improve selection of replacement breeding stock for sheep, beef and swine in Idaho, **Washington**, **Montana**, **Oregon** and British Columbia. Three sheep producers evaluated the size of the loin muscle and fat covering. Two swine producers evaluated breeding stock for replacements or for sale. Two individual beef producers used ultrasound for selection of replacement bulls and two multi-owner commercial sales used the evaluation procedure on all bulls and heifers offered for auction.

Gooding County and Twin Falls County Extension has scanned 80 head of breeding heifers and bulls during the past year to provide producers with additional information to be used in the selection of breeding animals. In addition to the evaluation of breeding animals, over 400 market steers and heifers have been scanned and comparison made to the carcass values received from the Inside Beef program cattle to verify the accuracy of the ultrasound technology. This practice is used to further the work isolating superior genetics in the beef industry using ultrasound technology. Technicians are certified to assure the correct image is evaluated at a centralized processing laboratory. These images are measured for back-fat, rib-eye area, and for % intermuscular fat. These measurements are then used to calculate Estimated Progeny Differences (EPD's) for the beef industry. Many producers in Idaho and surrounding states are using this technology to calculate accurate EPD's for their cattle. The increased use of accurate EPD's has enabled seed stock producers to identify superior animals to be sold at a premium.

Beef cattle breeding and genetics information was shared with clientele at eleven different events. These events included classes, seminars, workshops, winter beef schools, and

field days. This educational effort resulted in 219 face-to-face contacts. Beef cattle breeding and genetics information was disseminated in a variety of publications. A total of ten publications were written by specialists and extension educators. These publications included abstracts, proceedings, impact statements, Extension publications, research/ project reports, and popular press articles.

During the 2002-03 programming year, beef producers received information and education from County Extension. One example was the USDA dry milk feed program. Extension educators along with area feed suppliers hosted two seminars dealing with feeding non-fat dry milk and products containing dry milk. Beef producers received information that they used in determining how and whether or not to use the non-fat dry milk in their feed rations.

The District II Beef Advisory Committee suggested several topics for the winter beef schools. University of Idaho Extension Educators from Adams, Gem, Canyon and Owyhee counties collaborated with University of Idaho Animal and Veterinary Science faculty, local veterinarians, allied industry representatives and local cattle associations to conduct 5 beef schools in Southwest Idaho.

Beef Production programming in Lemhi County focused on the 6-day Annual Cattlemen's Winter School. The directors of the Lemhi County Cattle and Horse Growers Association determined topics, including the Farm Bill, Noxious Weeds, Beef Quality Assurance, Alternative Forages, Risk Management and Oregon Country Beef. Average attendance was 40 people. Twelve ranches are now BQA certified with one ranch reporting that the certification gained them two cents a pound on their cattle.

Production of annual forages has been the focus of Extension investment across the state. Valuable time has been invested in writing grants, managing plots, scheduling workshops, and presenting on a variety of annual forage topics. Contacts and agreements with University of Idaho, **Utah** State University, and landowner cooperators have resulted in the establishment of on-farm field trials and educational programs and materials. Also, one of the largest annual forage variety trials was planted and harvested on the University of Idaho Research Farm in Kimberly. Presentations were given at classes, seminars, workshops, and field days at locations across the state and western region. Displays and posters of annual forages were also presented at state and regional meetings, along with a statewide workshop and field day. Publications were distributed to clientele through a variety of venues including; proceedings at a national meeting and western regional meeting, state research report, and local newspapers.

b. Crops

In 2003, yields from 4 full pivots of corn averaged over 190 bushels/acre. Three more pivots averaged over 180 bushels/acre. A new Pioneer hybrid, Pioneer 39H84, has been identified that will yield as well as Pioneer 39D81 and, possibly mature a week earlier. 320,438 bushels of corn were delivered to Snake River Cattle Feeders at an estimated value of $881,204 to an industry not represented in Idaho only four years ago.

Workshop participants have gained new knowledge and skills for managing small grain

crops under southwest Idaho conditions. As this knowledge is applied in the field, small grain yield and profitability of the small grain enterprise have increased. This knowledge includes information relative to new variety selections and results of agronomic research of small grain management.

Outputs of the crops programs include seminars, in-service sessions for county faculty, cereal schools, presentations at professional meetings, Displays/Posters, and field days. Combined, these events reached approximately 6,022 stakeholders. Publications from the crops team include 1 refereed and 2 peer-reviewed journal articles, 5 abstracts and proceedings, 3 Extension publications, 4 research reports, and 4 popular articles.

The crop entomologist increases the working knowledge of growers, fieldmen for agrichemical companies, county faculty and homeowners by creating formal and informal educational materials, providing technical support, and disseminating knowledge in entomology and insect pest management issues. The University of Idaho has presented information to growers and industry groups through 30 seminars and workshops to a total audience of 2,219 people. Eight of those extension presentations were in Spanish as part of the UI Cooperative Extension System Spanish IPM Training Clinics (see below).

Two University of Idaho CIS publications and one peer-reviewed paper have been published on the mealy bug. Extension has supported and written crisis exemption and emergency use labels for different insecticides.

The cereal schools held in District IV were very successful this past year. Schools were held in Preston, Pocatello and Idaho Falls. Attendance was good at all locations. 49 producers attended the Preston school. Prior to delivery in Preston, only 5-8 producers from Franklin County would typically attend the school in Pocatello. The increased attendance represents dramatically improved outreach to the target audience.

Evaluations indicate that the cereal schools were successful. Self-assessments reveal a 57% increase in understanding of compost application and 36% increase in practical understanding of soil microbiology. Ninety-three percent of participants said they would also be willing to re-evaluate their irrigation practices.

Following the February 6, 2003, cereal school in Lewiston (Nez Perce County), a questionnaire was presented to attendees. Thirty-nine people (51% of those attending) responded to the post cereal school questionnaire. The following information was gleaned the questionnaires returned for the Nez Perce cereal school. 98% of those responding expressed an increase of knowledge as a result of attending; 32% of those responding indicated a knowledge increase of 80% or greater and 75% indicated a knowledge increase of at least 50%. 92% of participants indicated they had used information from past cereal schools for decision-making on their farm or in their agri-support business. Number of acres represented by those attending the meeting: 178,000 acres.

UI Extension has demonstrated that the cost of treating hop to control powdery mildew can be reduced by about $50 per acre for growers using the Hop Powdery Mildew Forecasting Model, developed with collaboration from the Idaho Hop Pest Management Program.

Adoption of this technology will save about $182,000 annually, or nearly 2% of the total value of Idaho's crop.

Through information received from the degree-day calculator, growers were able to improve application efficiency by accurately time their spray to eliminate over-spraying (by spraying too early) and damage to their crop (by spraying too late).

Thousands of dollars went straight to the fruit growers by supplying a Farmers Market for them to market their fruit. There is a great interest to continue this and develop other direct marketing tactics.

Production of forage alfalfa was the focus of Extension education presentations to more than 3,575 face-to-face contacts in 36 different Forage classes, schools, workshops, and field days reported by faculty for 2003. 13 new publications and popular articles augmented direct teaching in 2003.

One indicator of success of an Extension program is interest expressed by other states in the program. Three specific Idaho alfalfa-related programs were exported to other States in 2003 by invitation, including: "Alfalfa water use efficiency and management: the risks of deficit irrigation" and "Managing center pivot systems in forage production" at the Western Alfalfa & Forage Conference and to subsequent hay growers conferences in **Oregon**, **Washington**, and **Colorado**. Similarly, "Sampling the moisture content of alfalfa in the windrow" was presented to the Western Alfalfa & Forage Conference and was subsequently invited to **Utah** and **California**.

Presentations made at annual forage programs reached 582 adult contacts in 2003. Evaluations suggest that the programs increased clientele awareness of annual forages and cropping system options that are recommended in Southern Idaho. Programs assisted producers to begin thinking "out of the box" on possible cropping options. A survey conducted at the Glenns Ferry workshop showed producers are managing grazing in a variety of situations, including yearling beef animals, dry cows, cow/calf pairs and dairy animals on pastures ranging from 15 to 600 acres. When asked about changing their grazing methods 67% stated they would definitely or somewhat change their current grazing methods. 67% also stated they would definitely or somewhat change their cropping systems. The Kimberly Forage field day survey stated that participants learned about: several cropping options available with annual forages, planting of corn and turnips, grazing management, founder and prussic acid cautions, and yield potential.

Participants completed a pre- and post-survey at a workshop on potato seed planting management. Participants increased their overall understanding an average 29 percent.

Three Madison County farmers collaborated with UI Extension to evaluate soil moisture monitoring to determine irrigation scheduling. Watermark sensors were placed in 15 locations on May 15, 2003. Irrigation water was scheduled according to data collected. Farmers reported saving the cost of at least one irrigation during the season. One producer reported saving $20.00 per acre, and total yield was near or slightly above previous years.

During the program year, fifteen classes were offered to Spanish-Speaking farm laborers. One hundred and one Spanish Speaking farm workers attended the classes. The average increase in student knowledge was 67%. Post-class interviews were positive and most students indicated they would implement at least some of what was presented. Questions asked by those in attendance indicated a high degree of understanding and an overall acceptance of principles discussed.

'Ranger Russet' potatoes are desirable for the grower but may have degraded sugar and fry quality over time in storage, limiting acceptability to the industry. Our studies have shown that long-term storage is possible with proper management. Processors and growers have begun to utilize recommended storage management concepts.

A UI Extension video to teach proper management of foreign material for quality potatoes has been adopted by the processing industry, as mandatory learning for their contract growers. The video was shown and discussed with 120 participants at a food and farm safety workshop during the 2003 University of Idaho Potato Conference. Of the people surveyed, 91% indicated they would use some of the suggestions outlined in the video to reduce foreign material on their farm.

Two workshops were held at the 2003 University of Idaho Potato Conference on developing cost of production estimates for potatoes using University of Idaho Excel spreadsheets. Responses from 19 producers attending the workshops showed:

- 100% learned something that they would use in managing their farm business.
- 100% indicated that they would use something learned at the workshop in managing their farm.
- 100% indicated they had a better understanding of how to develop cost of production estimates.

When asked if they received useful information during the conference, 100% of respondents indicated agreement.

The Potato BMP project has had significant impact on the potato industry. Results of this project were demonstrated to growers at three field days with more than 100 in attendance. When told that future demonstration fields for this project were going to be held in other locations, growers in the Rexburg area requested that the project be repeated in their area next year. A member of the Idaho Potato Commission had very high praise for the project in an opinion expressed to a local newspaper. Five local growers (approximately 7,000 acres) requested a personal evaluation of their operation to see what deficiencies they can improve. A geospatial technologies project is also in its initial phase and only minimal impacts have been made. The growers that were involved with the Variable N studies have more familiarity and comfort with this technology. Approximately 250 people participated in the workshops and field days.

Beef Programs

In FY2002, Idaho's Beef Quality Assurance (BQA) Curriculum was launched. To test the materials, a presentation was given to approximately 20 producers. During the presentation, producers were given pre-and post-test to determine the amount of knowledge gained by participants regarding BQA principles. Participants were also

encouraged to evaluate the overall session. These evaluations were used to make improvements and refinements to the curriculum and presentation materials.

In FY 2003, 170 beef producers participated in BQA training/certification sessions. Results from the pre-and post-tests demonstrate an increase in producers' knowledge of BQA of approximately 45%. To date 185 individuals and 35 ranches have completed requirements to become BQA certified. Program evaluation results continue to be used in the improvement/refinement of the BQA materials.

Presentations at various events increased the awareness and knowledge of beef producers regarding: (1) tools to select superior animals, (2) tools to make sound selection decisions, and (3) improvements that can be made in breeding and selection programs. Inquiries following presentations, and requests for additional information, suggest an increased awareness and possible adoption of breeding and selection practices.

As a result of the informational workshops dealing with the USDA dry milk feed program, Power county cattlemen had been approved to receive 313,500 lbs. of product through the Non-Fat Dry Milk Emergency Feed Program. Two producers in Bannock County decided to use the milk in their feed rations during the fall of 2003. Other beef producers decided to barter their milk for other milk containing feeds. One beef producer gained enough information to apply and become a feed supplier for the USDA program.

Cattle genetics and selection. Very little data has been collected to demonstrate the effectiveness of higher tech selection tools. We do know the heritability of muscling and fat traits and can use them to predict the outcomes. All of the breed associations have standards to use for selection using ultrasound. Some producer's use these standards to inform their management, others use their own data to compare and select. We do know that since we have been doing ultrasound with these producers, the size of the swine and sheep loin eye has increased more than 25%. For swine producers the amount of backfat has decreased more than 30% in five years.

Evaluation questionnaires completed by A to Z participants at the year-end meeting rated the program highly successful and informative, and requested that the program continue. The rankings of the usefulness of the information gained are (1) retaining ownership of calf crops (2) enhanced marketing of the calf crop (3) fine-tuning ranch management (4) keeping abreast with changes in the beef industry and (5) improved selection of replacement heifers and bulls. Several producers are using their individual data to market their calves to order buyers and on satellite and internet marketing systems.

Breeding cattle selection continues to be an important part of the production cycle. Ultrasound technology has provided a new tool that producers can use to add additional information in the selection of breeding animals. Numerous producers have used ultrasound technology to measure backfat, intramuscular fat, and loin area of potential breeding animals. In addition to individual producers, the Saler and Shorthorn spring and fall sales have taken advantage of the technology to aide in the marketing of their breeding stock. The information is provided to prospective buyers prior to the sale of the animals.

Beef cattle nutrition information was shared with clientele at four different events including classes, seminars, and workshops. This educational effort resulted in 175 face-to-face contacts. Beef cattle nutrition information was shared with clientele in a variety of publications. Specialists and educators wrote seventeen publications including Extension publications, abstracts, proceedings, research/project reports, and popular press articles.

Beef cattle production and management information was shared with clientele at twenty different events including classes, seminars, short courses, and workshops. This effort resulted in 438 face-to-face contacts. Topical information was shared with clientele in eight Extension publications on a variety of topics. These publications included book chapters, Extension publications and popular press articles.

Five hundred-sixty ultrasound images were collected on eight ranches this past year. These images were submitted to the ranches breed association to obtain EPD'S. This information was then used to help breeders improve the carcass characteristics of their animals. The long-term goal of the program is to increase marbling and decrease yield grades of beef cattle across the industry. It will take several more years of monitoring to determine the success of the program.

Participants at the beef schools (76 at Cambridge, Idaho) were taught calf delivery techniques using a model cow, scour treatments, recommended calf-hood vaccinations, animal health products update, overview of beef quality assurance certification and progress of weed control programs. Several participants expressed satisfaction with the program, especially the hands-on experience and instruction on calf delivery. They were anxious to apply what they had learned.

Michael and Carolyn Thomas completed the Beef Quality Assurance workshop and certification in January, 2003. When they sold their cattle on the Superior Livestock Auction at Steam Boat Springs, CO, they reported that being BQA certified gained them an additional 2 cents per pound.

Cow-calf producers were surveyed the summer of 2003 about their management systems and how extension programs have influenced their decision making process. Seventy-five percent of those surveyed said that they had modified their calving facilities due to extension educators programs in Oneida, Caribou, Bannock and Bear Lake counties. There was a 9% increase in use of calving barns and a 10% increase in the use of calf hutches from birth to seven days.

Forty-four percent of producers reported they modified their mineral supplementation program because of extension education. There was an overall increase in the use of customized trace mineral packages for supplementation of beef cows prior to calving. Twenty-three percent more people use a custom mineral mix now compared to the number prior to 1990; 43% of those who were not report using it in 1990 now do; 10% of those who did use it prior to 1990 have discontinued use. There was a 5% decrease in the number of people using salt compared to 1990; 6% of those who did not report using salt prior to 1990 use it now; 42% of those who used it prior to 1990 do not use it now. There has been a

significant change in the practice of using salt since 1990.

The A to Z program enables cattle producers to learn the cattle industry and how their cattle meet industry standards. It informs changes in cattle breeding programs, to take advantage of market conditions. The record books encourage producers to keep better records of their herd actives. Mineral deficiency can be very costly, but mineral feeding programs may not be always effective. The possibility to provide supplemental selenium through fertilizing is promising for cattle on irrigated pastures.

Beef cattle production schools in North Central Idaho taught about bull selection, protein supplementation and body condition scoring. An interview with the local feed dealer indicated that hay quality testing and sales of protein supplements had both increased following the protein supplementation class.

Over the last six years, Extension has worked with a group of cattle producers in Idaho County to form the Clearwater Valley Beef Alliance marketing cooperative. Extension continues to work with this group to analyze marketing and management alternatives. The group uses the latest technology to cooperatively market their beef cattle. The first and second year cattle were sold on video satellite auction. The past four years the cattle were sold using Internet marketing outlets. In response to this effort, two other cattle producers adopted this technology this fall and sold their cattle using the Internet. The producers received approximately 3 to 5 cents per pound more for their cattle selling in the alliance versus selling locally each of the first five years.

Wool pools have been a mainstay for small sheep producers. The past few years, growers cannot afford to shear their sheep, let alone market the wool, because the price offered is less than the tax on wool in Idaho. In a new pool that sought to resurrect wool pooling across south Idaho, about 30 producers from Council to Lava Hot Springs participated this past year. Additional pools were resurrected in four locations in Idaho.

c. Nine faculty report to the crops and variety testing projects. Sources of grant funds received in 2003 include State ($37,788), Private ($21,200), and USDA-ARS STEEP ($9,000). The Extension entomology demonstration research program has attracted $189,998 in State Commodity Commission and private chemical company funding. The Hops program has generated $59,662 from the Hop Research Council. The pesticide industry has contributed $37,200. The Idaho Pea and Lentil Association has contributed $9,000; USDA-ARS, $29,607; ID State department of Agriculture specialty grants program, $46,527; ID Alfalfa Seed Commission, $8,589; other industry grants, $2,000; Annual forages were supported through State critical issues ($9,550). Extension work in potato production attracted a total of $257,102 in grant money from various funding agencies. Projects were completed in collaboration with councils, commissions, agricultural chemical dealers, state and federal agencies, professional associations, businesses and cooperatives, state and regional agricultural agencies, commodity and trade associations, and potato producers.

Commodity groups awarded two grants totaling $10,500 to support beef quality assurance

(BQA) efforts in the state of Idaho. A total of nine University of Idaho faculty members including specialists and extension educators, participated in the Beef Quality Assurance program. Eight University of Idaho faculty members, including specialists and extension educators, participated in the Beef Cattle Breeding and Genetics program. Four University of Idaho faculty members, including specialists and extension educators, participated in the Beef Cattle Nutrition project. Eleven University of Idaho faculty members, including specialists and extension educators, participated in the Beef Cattle Production and Management project.

d. The crop variety-testing program is conducted in cooperation with Oregon, Washington, and Utah who provide materials and share evaluation data. Within Idaho, the testing program is statewide. Idaho participates on the Western Coordinating Committee (WCC) 89 on Potato Virus; and WCC-66 on Cereal Aphid Management. The Annual Forages program has helped meet grower needs in California, Utah, Washington, Colorado and Oregon.

Key Theme – Agricultural Profitability

a. Idaho's Farm Management program reaches growers through a variety of venues that demonstrate financial decision-making tools. County faculty were trained with several revised programs including revised decision-aid software to develop and analyze cost of production for individual enterprises such as the Crop Enterprise Budget Worksheet Program (CEBW), written specifically for crops, the Livestock Enterprise Budget Worksheet Program written specifically for livestock, and the Machinery Cost Analysis Program (MACHCOST) that calculates the cost to own and operate machinery and equipment. County faculty have extended the tools through use with individual producers.

   An article on developing production costs for sugarbeets in Idaho was published in the 2003 Winter Commodity School Proceedings. The University of Idaho in the book, Potato Production Systems, published a chapter on cost of production. Eighteen new livestock cost of production estimates were published.

   The farm management program involves two different Farm Management classes. In the first year we introduce the financial statements necessary for a financial analysis of any operation and develop these statements for each operation in our classes. Once these statements are in place, we analyze the operation and point out problems/areas of concern for the operations in question. In the first year, producers are able to learn the relative financial health of their respective operations as well as an in-depth enterprise analysis to help the producer see which enterprises are sustainable. Class #1 also teaches principles of human relations/resource management, resource inventory/management, and an introduction to record keeping using Quicken®.

   Farm plan development is the overall focus of year 2, while still emphasizing the current year financial statements and year-end analysis. A farm plan is a document that includes a Marketing Plan, a Crop and Farming plan with budgets and alternatives, a Livestock Plan with budgets and alternatives, a Risk Management Plan including the use of the Future's Market and Price Risk Management, and an Estate Plan for sending the operation into the

next generation. Producers are able to present this plan to lenders as well as investors. This plan helps the producer understand the value of his/her operation and to analyze other similar operations for acquisition or investment.

Twelve operations in eastern Idaho participated in the year #2 Farm Management class during 2003. Producers paid $200.00/opertion to take the class and supplied data from their own information to produce the farm plans. Teachers used a variety of media to teach the class including Power Point presentations, videos, overhead projectors, newsprint, and site-specific locations as needed.

b. Approximately 70 Farm Management presentations were made to extension clientele across Idaho using a number of different formats, including: non-credit farm management classes, workshops and seminars made during traditional commodity schools (cereal grains, beef, forage, potatoes and sugarbeets) and as stand-alone sessions. Topics included a wide range of standard farm business management topics, such as how to prepare financial statements, how to analyze financial performance, developing a marketing plan, analyzing market prices, developing equitable lease agreements, evaluating risk bearing ability, analyzing alternative risk management strategies. Efforts also focused on the development of presentations and resource material used in the business management classes. At least 30 articles on Farm Management were published in the farm press or as extension publications. Three new decision support computer programs were released. Approximately 563 Extension customers participated in Farm Management programs in 2003.

   Eighty-three percent of the operations that took the Farm Management II Class in 2003 finished the required financial statements. As a direct result of the class, three of the producers made marketing decisions which differed from their normal marketing. One producer received a loan for a new operation as a direct result of the information gained in this farm management class. All of the producers expressed that they were looking into finalizing Estate Planning ideas as a direct result of the estate planning section of the class.

c. Support for the agricultural profitability program is derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. Agricultural profitability programs are statewide.

Key Theme – Animal Production Efficiency

a. <u>Dairy</u>
   The high annual cull rate (38%), coupled with the low average number of lactations (1.8) for Idaho dairy cattle, is of great concern because longevity has a major impact on dairy farm profitability. According to records for Idaho DHI (dairy herd improvement) participants, reproductive efficiency has declined steadily since 1993 as evidenced in increased average days open, services per conception, and percentage first service conception

   Extension dairy specialists and extension educators collaborated on numerous educational

opportunities regarding reproductive efficiency, including: producer consultations, ten publications, six international presentations, nine statewide and regional presentations, coordination of an AI school, and one applied research project. There were a total of 1,906 personal contacts as part of this program.

Reproductive research on cooperating farms in Idaho and **Utah** focused on "Enhancing the efficiency of AI in dairy cattle through modified systematic breeding protocols utilizing heat detection and timed AI."

Mastitis control through proper milking procedures, teat dipping, dry cow therapy, and milking equipment maintenance is important to agro-security. Training laborers in mastitis control strategies minimizes udder infections and transmission of pathogens between animals. Faculty from the University of Idaho have developed educational materials for milking schools in English and Spanish. Conducting milking schools assists the industry by training farm labor, minimizing mastitis, and improving milk quality.

To support the growing Idaho dairy industry, the Extension team conducted a short survey "Assessment of Biosecurity Risks on Idaho Dairy Farms." A standardized series of questions to characterize biosecurity practices, vaccines administered, and resulting disease status for the herd has been prepared. As of November 1, 2003, 14 farm visits and surveys have been conducted in eastern Idaho. The University of Idaho Dairy Extension Team planned to visit and survey 31 more farms in south-central and southwestern Idaho before January 1, 2004. This research is of timely importance as a cow was recently diagnosed with bovine spongiform encephalopathy (BSE) (mad cow disease) in Canada.

In 2003, the Spanish-language "Clase del Ordeño" was offered across southern Idaho at five locations, with nearly 50 dairy employees attending. In addition, numerous dairy owners and managers have also attended this program.

Twenty-eight total presentations were given at the four English-language milker schools. An abstract was prepared and presented at the American Dairy Science Association annual meeting. There were 301 customer contacts at these schools. Project team members made twelve additional presentations with a dairy management emphasis. Total contacts totaled 409 for these additional presentations.

Free-stall housing and dry lots are common in southern Idaho. Variation in cow comfort exists among free-stall facilities. In a survey of 47 eastern Idaho facilities, 11% of the free-stalls were too narrow, 36% were too short in length, stall dividers were mounted too low on 85% of the facilities, and 89% of the free-stalls impaired the cow's ability to lunge forward as she rises to the standing position. Research has documented an improvement in resting time with modern free-stall design and a reduced incidence of lame cows. Some studies report increased milk production with longer resting times. An educational effort to improve cow comfort is underway to improve dairy profits in eastern Idaho.

Only one third of the protein fed to dairy cattle is recovered in milk. The conversion of phosphorus and other minerals is in the same range. As a result, large quantities of

nutrients are excreted or present in bedding, and are at risk of release into the air and/or water. Research suggests that more efficient nutrient management techniques may reduce these risks. However little data is available on different operations to inform managers about how they might best control these losses and reduce the volume of nutrients in the manure and process wastewater.

Eight dairies (approximately 12,000 cows) participate in the nutrient balance study. All nutrients that flow through a dairy are being recorded, including feed purchased, feed grown, milk sold, cattle bought, sold or died. In addition, feed samples are collected to determine nutrient concentration. The biggest concern is the amount of nutrients that leave the dairy in the manure and lagoon effluent. Pump run time is being recorded, as is the amount of solid manures used on the dairy or exported.

Learning how to apply manure at specific rates is a new challenge for Idaho dairy producers. University of Idaho evaluated two methods for calibrating manure spreaders on commercial dairy operations. Phosphorus feeding and manure management practices were also surveyed on forty eastern Idaho dairy farms. A total of 78 personal contacts were made through surveys and conducting the on-farm manure spreader calibrations.

Risk management education is conducted throughout Idaho via the "Achieving Risk Management Success in Dairy" (ARMS) program. The ARMS program has been integral in educating dairy producers regarding milk markets, cost of production, and historical economic price cycles. The ARMS program has been successful in teaching dairy producers the value of put options, a unique means of securing a floor price for a portion of their milk production. In 2003, ARMS classes reached a total of 134 FTF customers in this three-day class. Seven Extension faculty contributed to the ARMS program.

b. Dairy

On a statewide basis, indicators of reproductive efficiency such as average days open, services per conception, and percentage first service conception do not change rapidly in the current records systems used by dairy producers. Therefore, more time must elapse before an accurate assessment of the outcome is made. Nevertheless, notable indicators of success include:

A Treasure Valley dairy manager recently remarked "The OvSynch program, suggested by an Extension dairy specialist in cooperation with my veterinarian during a farm consultation, has significantly reduced the average days to first service and increased average days in milk in the herd." Increased profit is generated by shortening the calving interval and by increasing the number of times cattle are in the most profitable portion of their lactation--the first 150 days. This example gives evidence of a change in awareness of the cost of reproductive efficiency leading to a change in reproductive management through the use of systematic breeding programs.

Extension Dairy nutrition educators recognize that feed cost typically accounts for half the cost of production. In 2003, thirty dairy producers were assisted in evaluating potential ration changes to lower cost while maintaining herd performance. Winter Dairy Schools provided information to producers on how to calculate cost of production, comparing cost of

production, and management strategies during periods of low milk prices. A feed bunk management survey was developed and tested on eight dairy operations. Extension faculty will survey additional dairy operations in 2004 to provide baseline information on bunk management practices by Idaho dairy producers. Seven presentations and five publications were developed in support of this project. There were 270 customer contacts.

A pre-/post- test was used to evaluate knowledge change by milker school participants. The average score for the pre-test was 50.5% while the average for the post-test was 75.1%. The evaluation indicates a significant 50% increase in knowledge as a result of attending the milker school. Program participants were also asked to indicate which educational opportunities would they like to attend in the future. Ranked in order of preference: 1) herd health; 2) reproduction and AI: 3) nutrition; 4 calving management; and 5) heifer management.

Two producers, both fluent in Spanish, attended the Spanish language seminar with their milking crew. Both producers remarked that the seminar was valuable to them, and stimulated much interest in their employees. One producer remarked, "After consultation with my employees and through subtle changes in our milking procedures, we realized a gain of two to three pounds of milk per day." A two to three pound gain in milk per cow per day equals an increase of $22,000 to $33,000 in annual farm income for this operation.

Sand is highly desirable bedding source for dairy cows in free stall housing. The two largest impediments to its use are cost and increased bedding maintenance. University of Idaho faculty conducted a field trial to compare two sand saving devices versus conventional sand stalls on a commercial dairy farm. Cows have demonstrated a clear preference for stalls with sand savers over control sand bedded stalls. Stall occupancy was significantly higher in the stalls with sand savers compared to control sand stalls. Sand utilization has not differed greatly between stall beds. Additional data are being collected on stall preference, sand utilization and bedding counts.

Idaho Extension examined the effect of new versus old free-stall design on cow behavior and performance. Data were summarized and analyzed, and an abstract was prepared for the 2003 ADSA meeting. Average daily resting time per cow was increased by one hour with modern free stall design over old design stalls. Researchers have speculated that milk yield increases when cows rest for longer periods due to increased blood flood to the udder. However, milk production did not increase as a result of longer daily resting times in our study. Dairy producers are encouraged to remodel older facilities to enhance cow comfort but they may not observe a production response due to improved facilities. Five presentations were given and two articles were written by members of the dairy project team. There were 224 customer contacts.

Spreader calibration work revealed that manure application rates were highly variable between farms, ranging from 14 tons per acre to 112 tons per acre. Drier loads of manure tended to be more uniformly applied than wetter, sloppy manure. Estimated manure application rates differed by 10 to 45% between calibration methods. Both methods tested can be used to achieve a "ball park" estimate of application rate. Exact calibration is

impossible due to the natural variability in manure both within and between loads.

From the Dairy Practices Survey, we learned that phosphorus feeding levels were typically in the 0.4 to 0.45% range for lactating cows, slightly higher than current NRC recommendations. Phosphorus feeding levels have not changed in the last two years on most survey herds. Most dairies supplemented phosphorus in their feed and did not provide additional phosphorus in an outside mineral feeder. Phosphorus intake was therefore well controlled and luxury consumption was minimized.

Many dairies have only short-term manure storage capacity, which means it is land applied throughout the year. Others stockpile manure and do most of their land application after fall harvest. Nutrient compositions will vary dramatically under these conditions. None of the eastern Idaho producers surveyed practice nutrient testing of their manure.

Dairy producers in eastern Idaho are slightly overfeeding phosphorus to their dairy cows. Reducing phosphorus levels in dairy rations will be highlighted in this next year. Producers can save approximately $5 to $7 per cow per year by cutting phosphorus feeding levels to NRC recommendations.

c. Grants totaling $10,500 were received from Agribusiness to conduct dairy reproductive research project. The United Dairymen of Idaho supported dairy extension activities through an $11,100 grant. Support for the animal production efficiency is also derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. Although technically statewide, Idaho's dairy industry is largely concentrated along the middle Snake River plain.

Key Theme – Aquaculture

a. Aquaculture growers are challenged by effluent compliance limits, increasing regulations including a phosphorus waste load allocation, national effluent limits, losses due to disease and the need to improve production efficiency through high quality feeds and/or genetic selection in order to remain competitive and economically sustainable while protecting water quality.

In January, the Aquaculture Effluent Task Force (led by Extension) submitted a peer-reviewed package to EPA in response to their proposed rule. These comments, based on the best available science and empirical experience, have influenced and educated EPA and all involved about the nature of the domestic aquaculture industry, effluent water quality, the diversity of production systems, and practical, cost-effective treatment technologies. Aquaculture specialist wrote and edited the comments for the flow-through production system section.

Aquaculture farm data was collected and used to develop a trout farm economic model for small, medium, and large size trout farms in Idaho and North Carolina. Preliminary results have been submitted to EPA, demonstrating the financial burden of the proposed rule upon

trout growers. It remains to be seen how EPA responds to this information.

With regard to BMPs, EPA requested that the Aquaculture Effluent Task Force develop a BMP guidance document. In June the AEFT BMP committee formed and met with EPA. Best Management Practices for Flow-through, Net-Pen, Recirculating, and Pond Aquaculture Systems is in final review by academia and industry. The intended audience includes permit writers and producers.

b. A total of thirteen local, state and national classes and workshops were given to producers, processors and consumers. These presentations reached a total of 563 people. Team members had two professional papers published and wrote three major articles on aquaculture for popular press in Idaho. Major achievements in aquaculture waste management knowledge were measured in these meetings.

c. Support for the aquaculture program is derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. The trout farm enterprise budgeting project is collaborative with North Carolina. Idaho Extension also provides two faculty to Board of Directors and Technical Committees of the Western Regional Aquaculture Center.

Key Theme – Diversified/Alternative Agriculture

a. Extension addresses the growing demand for information for growers of specialty crops to help farmers remain profitable. Research and program delivery on location specific production methods of specialty crops has the potential to serve many of our current and beginning farmers.

A two-year trial of blueberry varieties suitable for Camas and other counties of southern Idaho has been conducted. Two publications resulted from the specialty potato evaluation trials in southern Idaho. The analysis and presentation of data from these studies is now considered complete.

A raspberry/strawberry demonstration project, designed as a replicated trial of nine cultivars of strawberries and six cultivars of raspberries, has contributed to predicting the performance and productivity of newer, higher quality cultivars in southern Idaho. After four years of yield and performance data, this project is still in progress, with ongoing analysis of jam made in 2003 from each raspberry cultivar and statistical analysis of yield data.

b. Self-reports from commercial nursery stock growers indicate that clients of the University of Idaho extension program supporting nursery production have begun on-farm research to test new crops and refine fertilization, soil management, and waste utilization practices for commercial nursery stock production. An ongoing discussion among nursery growers has ensued regarding risks and opportunities for using sub alpine and cork bark fir for nursery stock and Christmas tree production, as well as possible production methodologies.

c. Support for the agricultural profitability program is derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. This program is conducted statewide.

Key Theme – Grazing

a. According to Idaho "Natural Resource Trends" (NRCS, Dec. 2000) 11,763,100 acres of Idaho is privately owned grazing land. Idaho domestic pastures generally produce 50% or less of their potential due to poor production and poor harvesting efficiency. Increasing the productivity of domestic pastures in Idaho offers the opportunity to maintain or expand the forage base that supports the livestock industries as well as reducing production costs and the use of fossil fuels by increasing the amount of forages harvested directly by grazing animals. Most livestock operators raised in the traditional range livestock paradigm lack the skills and the motivation to apply advanced pasture management skills to improve their productivity and economic efficiency.

   Valley County Extension is cooperating with NRCS, the Valley Soil and Water Conservation District and Valley County Weed Control to develop pasture renovation trials and assist land owners with pasture renovation using a drill purchased with grand funds. In Ada and Canyon Counties, Extension teaches pasture management short courses for new grazers and provides individual consultation with clientele interested in pasture management or redevelopment. In addition to classes, field days, and seminars, faculty in Elmore, Gooding, Nez Perce, Valley and Idaho Counties provide consultation to assist operators and small landowners in identifying management practices appropriate for their operations, as well as hold at least one class, seminar or field day annually.

   Two 4-day hands-on grazing workshops were presented during 2003. Six Extension faculty from Idaho, one from **Utah**, and one from the University of **Missouri** teach the workshops. At each workshop, participants learn to manage pasture grazing in the classroom and in the field.

b. Participants in extension workshops and classes significantly changed their perspective and understanding of ecosystem principles leading to improved management of irrigated pastures. Improved understanding results in increased sustainability, through improved productivity, reduced purchased and fossil fuel inputs and reduced potential for undesirable impacts on adjacent property.

   The Lost Rivers Grazing Academy has been held once or twice a year for 5 years. Pre- and post-testing for several years documents that most participants significantly increase their understanding of the principles of grazing management, nutrient cycling, energy flow in ecosystems, and the management of these processes in agricultural system. Comments from participants in the last several Grazing Academies indicate that learners have applied what they learned, resulting in greatly improved carrying capacities on pastures, reduced use of harvesting equipment (and fossil fuels to operate the equipment), and greater flexibility for business decisions that make the difference between profit and loss.

The pasture management short course in the Treasure Valley met with high marks from both the small landowner and livestock operator participants for program content and delivery. In addition, participants indicated that they were planning to implement some or all of the following pasture management practices:

- Developing grazing systems for animals and plants including pasture subdivision, and managing time that animals are exposed to the pasture.
- Implementing best pasture management practices, including improving pasture through management of residual rather than renovation, use of mowing to control weeds, improved irrigation management to retain nutrients, and inter-planting of alfalfa field to convert to pasture
- Other practices to be implemented included development of weed management strategies, soil testing and appropriate use of commercial nutrients, using specifically adapted forage species and varieties, and proper renovation of power fencing systems.

Individual educators from Valley, Elmore, Gooding, Nez Perce, Idaho, Lemhi, Ada, Canyon assisted about 100 individuals in developing and implementing individualized pasture development and management plans and best practices on commercial ranches and small acreages.

c. The intensive grazing management program was supported by a $10,000 grant from the Idaho specialty crops fund, and $9,431 in scholarships from the Alternative Careers for Idaho Farmers program. Idaho Department of Environmental Quality invested $7,500 and the Upper Payette Cooperative Weed Management Area invested $7,500. Additional support for the intensive grazing program is derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. The intensive grazing program is conducted statewide, and with the assistance of land-grant colleagues from Utah and Missouri.

Key Theme – Home Lawn and Gardening

a. Master Gardeners

County faculty and state specialists contributed to beginning Master Gardener education. A number of these faculty made presentations outside of their own counties to help educate the Master Gardener candidates. Based on the number of Master Gardener Handbooks sold during 2003, about 220 beginning Master Gardeners enrolled in the MG training courses around the state.

Other resources used in these various MG education courses were office equipment, photocopiers, paper and other supplies, computers, video projectors, and classroom facilities. Administrative assistants in the various county offices also put in a number of hours organizing speakers and preparing class materials. Advanced Master Gardeners also helped make presentations on various horticultural topics in various counties throughout the state. An undocumented number of green industry professionals and laypersons also presented information to beginning MGs throughout Idaho.

At least 92 presentations were made to educate beginning Master Gardeners around the state. Thirteen workshops were included in this total. The educational series in each county (or district) typically contained 10 to 16 classes lasting 3 to 4 hours each time. In Ada County, six diagnostic plant tours were given to beginning Master Gardeners. In addition, at least six MG presentations were made by UI county extension educators in **Utah** and two presentations were made by UI faculty in **Washington** State.

Advanced Master Gardeners

Once the beginning Master Gardeners complete their initial volunteer time, they often drop out of the program. One way to maintain participation by Master Gardeners who have already completed the first year of training is to provide more educational materials for them. The demand for advanced training is increasing from stakeholders.

The advanced MG education and retention program included statewide participation by advanced MGs in the regional educational conference (Mini-College) offered by **Oregon** State University. A grant of $5,000 was obtained from Topic Team Grant Program from the UI Extension Service. Most of the grant was used to cover tuition costs for the advanced Master Gardeners who attended the conference. If MGs stayed in the dormitory at OSU and carpooled to the conference, they only had to pay $40 out-of- pocket to attend the 3-day program. Five advanced MGs from each district were selected to attend the conference. The conference has had a strong impact on advanced MGs around Idaho.

Advanced Master Gardeners volunteered their time, which kept them active in their local programs. Outputs included four workshops in Bannock County to provide additional education for advanced MGs in that county. District III provided a series of six classes and tours for advanced MGs. In Bonneville County, advanced MGs were on 24 committees to head up different topics of horticultural interest that beginning MG could complete their volunteer hours in. In Ada County, advanced MGs participated in a series of educational presentations to enhance their horticultural knowledge.

Sending advanced Master Gardeners to the Mini-College was a big success. Twenty-one advanced MGs traveled to Corvallis, Oregon to participate in the conference. Most of them thought it was a great experience. Upon return to Idaho, they met once as a group in a statewide conference via compressed video. At that time these advanced Master Gardeners said they thought a single statewide horticulture education for advanced MGs was out of the question for many reasons, but they agreed that advanced MGs in each of the four districts will hold district-wide educational conferences that advanced MGs from anywhere in the state could attend.

Consumer Horticulture

Consumer horticulture education is by far the biggest programming area of the Commercial and Consumer Horticulture Topic Team. Almost every county extension educator, whether or not they have horticulture responsibilities, deals with some topic involving horticulture education. Even county faculty members who do not conduct Master Gardener programs are involved with horticulture education of Idaho's consumers during the year.

More than 100 presentations were made throughout the state on consumer horticulture topics during 2003. A total of 13,582 homeowners attended these presentations (face to face contacts). In addition, 15 popular press articles appeared in newspapers throughout the state, and 11 Focus articles were published. The number of potential readers reached by these articles is in excess of 200,000. Additional outputs included answering questions posed by 700 documented phone callers, likely about one-third of the actual number of phone calls handled by various county faculty members or their Master Gardeners around the state. County educators report making an unrecorded number of faculty site visits. Site visits made by Master Gardener volunteers numbered well beyond 300. One faculty member made two television presentations, which aired on public TV (Bannock County). The number of potential viewers and listeners of Master Gardener radio and TV spots was estimated to be 625,000 (Ada County and the region around southwest Idaho, eastern Oregon and northern Nevada). At least six miscellaneous articles on home horticulture were published in 2003.

One of the unique outputs was a gardening clinic offered to Nez Perce Tribal members. This clinic presented information on no-till gardening, crops indigenous to the Americas, integrated pest management, and more. Twenty-five adult students attended the clinic (Nez Perce County) and mentioned the educational program was effective in a post-class questionnaire. Another unique program was completed in Ada County, and this program involved 15 women prisoners attending an educational series on “The Magic Garden.”

b. Master Gardeners

The goals of the beginning Master Gardener courses are to raise knowledge and awareness of plants and soils. Some of the counties uses pre- and post-test to determine improvements. Test scores of soil and soil fertility knowledge by MG participants in Twin Falls County increased by 30% after the class. A sub-sample of responses to horticulture classes taught by an extension specialist showed that 92% of the participants planned to use information provided by the classes.

Perhaps the best indicator of the effectiveness of the beginning Master Gardener Education Program is the trust that the county extension educators extend to participants completing the programs. People who complete the education courses answer the bulk of the horticulture questions received at the county offices. Most of the people who complete the courses readily complete their volunteer hours, which mean they often meet the public to discuss a wide range of horticulture questions. Overall, the beginning Master Gardener program has been highly successful over the years in Idaho. Without this valuable resource, county extension educators would be hard pressed to meet public demands for horticultural education and help.

At least 220 people completed the beginning MG education courses around the state, and nearly all completed their obligatory 30 hours of volunteer work. Assuming that 200 people completed 30 volunteer hours each, then a total of 6,000 hours of volunteer time was contributed around the state. This workforce helped other residents by providing services through their county extension offices, local landscape and parks projects, and by

presenting educational programs around their counties. The estimated value of the volunteer service is $70,200.

The volunteers in Ada County helped or assisted at least 10,000 people by presenting educational programs, answering phone calls about gardening questions, or helping people who stopped at the county office with their plant problems. Approximately 300 hours of volunteer time was used to trim public trees in Ada County. In Bannock County, beginning Master Gardeners assisted in Arbor Day plantings, a tree pruning and mulching event, planting at a veterans' home, maintenance of a water-wise garden, landscaping at several community parks, teaching 4-H classes on gardening, and establishing a patient garden at Blackfoot Hospital.

Trained Master Gardener volunteers were important contributors to horticultural programs offered by county extension educators. These classes provided advanced Master Gardeners with a sense of ownership in their educational programs and helped to retain them. The number of volunteer hours they worked around the state was tremendous and was very important for overall horticulture educational programming in Idaho.

Advanced Master Gardeners

Statewide, at least 387 advanced MGs were active in different county programs during 2003. The documented total volunteer hours worked by advanced MGs in four of the most active counties totaled 4,548 hours. Advanced MGs who volunteered their time in other Idaho counties increases the value of the program.

Outcomes from sending advanced MGs to the Oregon Mini-College clearly show the program was successful. Advanced MGs in each district in Idaho are setting up educational conferences in their districts for 2004 for other advanced MGs to attend. The advanced MGs are taking the lead and doing most of the work in setting up these conferences. Usually one county extension faculty member in each district (with the exception of District II) is helping to oversee the set up for the conference in their district. For the most part, advanced MGs are doing most of the work setting up the conferences including finding meeting rooms, contacting speakers, and determining costs. We believe these conferences will be highly successful since the programs are a grassroots effort, being put together from the ground up by advanced MGs. The first conference is scheduled for the end of March 2004 and the last conference is to take place by November 2004. Advanced MGs in the various districts want to attend the educational conferences in other districts, leading to more interactions among advance MGs across the state.

Another outcome from sending the advanced MGs to the Mini-College at OSU was that groups in each district are communicating with each other. At times, their communication has been sporadic, but they have tried to communicate. Overall, the advanced MGs strongly believe that the UI needs to appoint a statewide MG coordinator to help with setting up a statewide conference and providing all MGs with information about conferences in the region or nation. They also would like to hear about MG activities from different areas of the state, and they believe a coordinator will help to keep them informed and involved besides taking some of the pressure off of county educators around the state.

Consumer Horticulture

Several county faculty members documented outcomes in this area. For instance, 82 landowners participated in a spotted knapweed program in Teton County by spraying their property. In Ada County, volunteers completed over 300 hours of tree pruning and pruned over 1,000 trees. Another Ada County program resulted in an estimated 350 hours of volunteer time to help train others in composting to keep yard debris and other organic matter out of landfills. One indicator of the efforts of this program is that volunteers at a Boise Public Works Department event sold 3,000 compost bins.

We assume homeowners attending various presentations, reading different articles, or discussing problems on the phone would directly use the information to their advantage. The UI is able to provide information and experience. Since the university is regarded as an unbiased resource, the people of Idaho depend on the UI to help them with their various gardening problems. The ultimate outcome of providing information for consumer horticulture is to help homeowners save money and natural resources while minimizing the effects of cultural practices on the environment.

c. Support for the Master Gardener programs is derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. The Master Gardener programs are statewide. The Advanced Master Gardener program was partially conducted in collaboration with Oregon State University.

Key Theme – Innovative Farming Techniques

a. Approximately 140 producers raise 70,000 acres of Kentucky bluegrass in northern Idaho producing 40 million pounds of Kentucky bluegrass seed annually, valued at $50 million (Census of Agriculture 1997, Idaho State Dept. of Agriculture). This represents about one-half of the U.S. Kentucky bluegrass seed crop.

Sustained bluegrass seed productivity has historically relied on open-field burning of post-harvest residue. Field burning maintains stand longevity by reducing thatch accumulation, weed seed number and viability, and disease and insect pressure, and by returning potassium (K) and phosphorus (P) to the soil. However, field burning has been associated with significant air quality issues and public health impacts. In order to sustain bluegrass seed production residue needs to be managed through *in situ* decomposition and/or less burning. In the absence of burning and without enhanced straw decomposition or efficient straw removal methods, bluegrass acreage in this area will decrease, likely resulting in increased annual crop production, increased soil erosion, and decreased water quality.

b. In 2001, the Bluegrass team of UI scientists, educators, industry advisors, grower cooperators, and representatives from government, is developing alternative management systems that eliminate or substantially reduce the need to burn bluegrass residues yet sustain productivity and economical seed yield. Residue management systems are currently being researched and tested in long-term, large-scale, on-farm trials that

represent typical grower field conditions to properly assess treatment effectiveness on residue levels and impacts on grass seed production. A Kentucky bluegrass website has been established at http://www.ag.uidaho.edu/bluegrass/index.htm. A Kentucky bluegrass List Serve has been created, and extension publications have been drafted. Several field days and presentations were held for Idaho and Washington bluegrass growers in 2003 to share current knowledge, research, and recommended procedures.

c. The Kentucky Bluegrass project was supported by the Washington Turfgrass Seed Commission, $11,000; Idaho State Department of agriculture, $19,950; and a Federal, SARE Grant for $300,000. Additional support was provided by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. The University of Idaho's extension and outreach efforts primarily serve the Idaho Kentucky bluegrass industry, with private partnerships and clientele outreach in eastern Washington.

Key Theme – Invasive Species

a. Eight weed control experiments were conducted in small-grain cereals. These experiments included the third year of best management practices for jointed goatgrass management in winter wheat, field bindweed control in winter wheat following fallow applications, and five broadleaf and wild oat control herbicide evaluations. We also evaluated prohexadione for reducing lodging in spring wheat. Most of the efficacy trials were conducted at the Kimberly R&E Center. Off-station trials were located near Paul, American Falls, and Preston and conducted in cooperation with several county extension offices.

   Results from the small-grain cereals experiments conducted in 2002 were presented at the Extension and Outreach Conference, Idaho Crop Production Association Conference and two commodity schools. Growers, crop advisors, and other agricultural professionals increased their understanding of weed management in small-grain cereals and sugar beet. Exchange of this information at regional professional meetings has benefited other weed scientists and my weed science program.

   A Cooperative Weed Management Area (CWMA) advisory committee was formed to formalize and facilitate a voluntary, cooperative, working relationship between private landowners and local, state and federal agencies/land managers in Adams County. Grants were received to fund equipment and chemical. Spray campaigns were conducted on Mediterranean Sage, Orange Hawkweed, Yellow Starthisle, Yellow Toadflax, Sulfur Cinquefoil and knapweeds. Additional spraying and seeding were done on the burn areas. A research project aimed at determining the effectiveness of grazing goats as a control for leafy spurge was completed in Lemhi County. Over 30 workshops, short courses and lectures were given on weed control and 5 extension publications were completed. An invited presentation on halogeton was made to the Twin Falls County Commissioners, following a petition to place the plant on the county noxious weed list.

b. Weed identification, bio-control, chemical selection, timing and effectiveness of control practices were topics about which participants demonstrated that significant learning had

occurred. The public awareness of weeds was increased through news articles and displays at courthouses and county fairs. Private applicators received re-certification credits and increased their knowledge of weeds and control treatments. Targeted weed infestations have been reduced, although it will take time to evaluate the long-term effectiveness of the control treatments. Five extension bulletins/CIS's were published.

c. Grant Funds supporting these projects include private companies ($11,200); Federal National Jointed Goatgrass Research ($20,000); and Federal, USDA-CSREES ($8,000). Support for the invasive species is also derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. These projects are Statewide.

Key Theme – Ornamental/Green Agriculture

a. County faculty and state specialists collaborate to benefit the green industry. Extension education, research, and demonstrations are integrated components of the program. About 1.5 acres at the Sandpoint R&E Center are used for grant-supported research for evaluating seed sources of native fir trees for commercial use. Two grants were received for helping to educate the green industry personnel. Both grants were from the Idaho Department of Agriculture.

   Other resources used to support the green industry were office equipment, photocopiers, paper and other supplies, computers, video projectors, and classroom facilities. Administrative assistants in the various county offices also put in a number of hours organizing speakers and copying class materials. Advanced Master Gardeners also helped make presentations on various horticultural topics in Ada County.

   At least 16 presentations were made to educate green industry personnel around the state. In Ada County, five 3-hour workshops were held and four one-hour clinics were held for educating garden center employees. The one-hour clinics were held at a commercial garden center. In Boundary County, a one-day conference was held to provide nursery stock producers with the latest information on marketing and growing woody plants. Seven presentations were made to the green industry in northern Idaho. A total of 625 face-to-face contacts were made via these various presentations.

   Two tours of research work and its implications were given to nursery personnel in north Idaho (in Bonner County and Latah County). The Bonner County extension educator helped conduct two regional focus sessions in 2003. A nursery extension web site was established during 2003. The site contains Idaho nursery statistics, cultural practices, research reports, and links to important nursery sites. Three articles in the Idaho Nursery and Landscape Association's bimonthly publication, *The Taproot*, and four research reports were published and provided to nursery growers around the state.

b. Several Extension programs resulted in pesticide applicator re-certification for green industry personnel. In Ada County, the number of landscape maintenance workers that

rely on Extension diagnostic assistance has continued to increase. Improved credibility of Extension to that industry results from high quality service, and increased use of Extension diagnostic services results in appropriate treatment of the problem. Information provided by Extension reduces the likelihood that excessive rates or inappropriate formulations of pesticides will be applied to our landscapes. In Boundary County, the nursery conference continues to attract more people each year, and those attending the conference have expressed high satisfaction with the content and presentation of the educational programs.

About 450 people visited the nursery extension web site during 2003. Many of the people visiting the site were from Idaho, but a significant proportion of visitors were from areas outside the Pacific Northwest and even outside the U.S.

Due to the unique perspective and experience of the Bonner County extension educator, he has been asked to serve on a regional (north Idaho and eastern Washington) landscape task force (Urban Landscape Committee) to improve industry professionalism. This outcome shows that green industry education is an important component of horticulture education efforts in the state and region. As Idaho's population grows, so will its green industry. As more people become employed by this industry, the educational needs will continue to be in demand.

c. Two private grants support this program, totaling $6,850. Additional support for the green industry program was derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. Projects in this topic are statewide.

Key Theme – Risk Management

a. Price risk, risk management strategies, milk pricing systems, basic and advanced marketing strategies, and marketing tools were among the topics of seminars, workshops, and short courses developed and presented for 266 clients of Idaho Agricultural Risk Management programs in 2003. Specific classes in 2003 included "Achieving Risk Management Success in Beef Cattle" (Beef ARMS), and Dairy ARMS classes, part of a 3-day workshop to help producers understand the value of using the Future's Market to control price risk on a dairy operation.

b. Producers who attended the Dairy ARMS class gained confidence in their abilities to use the Future's Market as a way to minimize price risk on their dairy operations. One producer contacted the milk coop that he is using and was able to contract part of last year's milk for a better than market price as a direct result of the Dairy ARMS class. One producer was able to convince his lending institution that he could fulfill his debt repayment as a direct result of personal consultation and enterprise budgeting from an office visit.

Risk Management workshop participants were surveyed before and after various workshops. Participants indicated that they had increased understanding of price risk, importance of marketing plans, risk management strategies, and tools to implement them.

Participant comments and responses to questions indicate motivation and knowledge to adopt a range of risk-reduction strategies including:

- Developing price risk plans.
- Participation in futures marketing.
- Participation in forward contracting.
- Record keeping to manage costs of production.

c. Support for the risk management program is derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. This is a statewide Extension program.

Key Theme – Small Farm Viability

a. In Idaho, county extension offices are experiencing increasing demand for assistance in production and marketing of specialty crops by both traditional growers looking for a way to diversify and from the small acreage landowners looking to make a living off their land while preserving their natural resources. These small-scale, high-value enterprises show potential to help in stabilizing and expanding income, particularly in struggling rural communities. There are more than 40,000 small acreage landowners in the Treasure Valley and Southwest Idaho. Around 60% of all farms in the Magic Valley could be considered "small." These clients are in need of specific information and assistance in making their farming enterprises successful.

A small farm conference in 2003 was held in conjunction with the College of Southern Idaho and the Northwest Coalition for Alternatives to Pesticides. Extension faculty co-planned the program and were presenters. The conference stressed local food production for local consumers and organic production techniques. About 75 individuals attended.

The Small Acreage Landowner Enterprise Development Series (SALEDS) was held at the UI Business and Technology Incubator in Caldwell. The 5-part enterprise development series targeted small acreage landowners in Southwest Idaho. Each month a developmental and content topic was presented in an evening forum. Participants learned new skills in economic analysis, increased their awareness of agri-business opportunities and improved management techniques related to sustainable use of their land.

A grant funded a multi-state project with **Washington** State University, **Oregon** State University, the University of Idaho, Washington State Department of Agriculture and Rural Roots for research and education on *Understanding, Evaluating and Improving Direct Marketing Systems for Small Farms* continues. UI has collaborated to survey, publish and distribute “The 2003 Guide to Farmer's Markets in E. Wash and N. Idaho.” A web site for this project is also under development and will be launched in 2004.

Another multi-state direct marketing project ended this year. Over a two-year period, 13 farm direct marketing workshops were held in five states, engaging more than 1,700 people in education and discussion about direct marketing opportunities and techniques. Idaho

attendance rate was approximately 170. Two publications were developed through this grant, based on our shared experiences in the conferences and workshops that were held. The latest of these publications is available on line as a PDF file to be used by extension educators and others. It was completed in September of 2003 and is titled: “Organizing a Successful Agricultural Direct Marketing Workshop.”

The Cultivating Success program, using locally developed and NxLevel curriculum was again conducted in northern Idaho. The Ag Entrepreneurship course was taught for the second time in the spring of 2003 using the NxLevel "*Tilling the Soil of Opportunity*" curriculum (which *Cultivating Success* adopted for its farm planning/business management course). Twenty students took the course and all developed a business plan and presentation. The Idaho Small Business Development Center is working with us on instructing this course and offering valuable one-on-one counseling with students.

Another WSU/UI course in the *Cultivating Success* program was piloted in the summer of 2003 titled *Field Analysis of Sustainable Food Systems*. This course was a 6.5-day intensive field course which included 8 students and 2 instructors who visited 20 sites and talked to 25 people about food production, processing, distribution, marketing and retail aspects of the food system.

b. Outcomes of both Treasure Valley and Northern Idaho Small Farms Conference planning: developed new and strengthened existing partnerships with key farmer, industry and agency representatives who are programming for or working with small acreage farmers. This planning effort also identified numerous resource people who can contribute to the educational effort to support programming for small-scale farmers and ranchers.

   Small Acreage Landowner Enterprise Development Series (SALEDS) at the UI Business and Technology Incubator in Caldwell, Idaho attracted 40 individuals from five counties. The SALEDS program resulted in several businesses being developed and networking opportunities for the participants. Individual small-scale farmers were assisted with enterprise budgeting, market gardening, nursery crops and variety selection.

   Post-test evaluations of the Living on the Land course showed participants to have a positive change in knowledge in all 26 areas covered. The greatest change (> 40%) was about septic systems, wellhead protection, integrated pasture management, groundwater protection, plant identification, irrigation practices, selection of pasture seeds, stocking rates, cross fencing, electric fencing, and composting.

   Ten or more units planned to implement the following practices on their place as a result of attending the course: weed control, well care and wellhead protection, pasture management/maintenance, grazing systems, nutrients and animal waste management, over seeding pasture, developing a fertilization system, pest management, scheduled drinking water testing, re-vegetation of bare ground, pasture fencing/paddocks, and septic system management.

   Class participants explained how they became better land stewards in the following ways: “Learning about irrigation techniques, soils and soil fertility, and grazing management has

provided the info to become a better land steward" and "We are planning now - based on acquired knowledge - rather than just reacting to problems that emerge."

c. Funding for this project includes $21,270 (most through UI Extension and ISDA Specialty Crops funds). Professional development funds invested in this project include $15,520 (SARE PDP). Other multiyear, multi-state USDA grant funding projects are supporting various aspects of this project - $188,150.

d. Most of the activities are considered statewide in scope. Much of the small farms work is conducted in collaboration with Washington and Oregon State Universities.

GOAL 2 – A SAFE AND SECURE FOOD AND FIBER SYSTEM.

Overview

a. Outputs: During 2003, 16 individual faculty and staff from the UI College of Agricultural and Life Sciences contributed a significant portion of their time to projects reported under the food safety goal. There are 38 paraprofessionals that administer the EFNEP and ENP lessons on food safety and resource management. Faculty produced 10 publications and contributed to the delivery of 28 faculty presentations (workshops, field days, or other educational events) and hundreds of EFNEP and ENP consultations. In total, participating faculty estimate the total number of direct contacts with stakeholders at 91,311.

b. Outcomes: UI Extension provided education about food safety and security to youth, seniors, limited income, business, and traditional audiences. Youth learned the importance of personal hygiene and its relationship to food, food preparation, and human health. Older youth, many who are destined to work, at least temporarily, in food service industries, also learned about sanitation and safe food handling practices. Limited resources audiences, in addition to the food safety instruction, learned how to manage their finances and their pantries to ensure adequate, nutritious meals for themselves and their families. Skills learned include menu planning, budgeting, reading nutrient labels, and differentiating between foods that are safe and those that need to be discarded. Seniors benefit by learning ways to maintain adequate nutrition, as their metabolism and finances change.

   A long-valued service of Extension has been to provide residents information about safe food preparation and storage. For much of this service, Extension has managed a corps of volunteer master food preservers/food safety volunteers to reach out to the public, and to answer the public's time-sensitive questions. Extension has taught people about the importance of temperature to reduce risk associated with activities for food storage and food preparation, and has taught them how to manage for desirable temperatures.

c. Impacts: Limited resource families have learned to manage their food budgets. By planning meals, shopping with a list, and comparing prices, many have reduced or eliminated the number of days when they do not have sufficient food for their families. Thousands of Idaho families are at reduced exposure to the risk of food borne illnesses

because of just-in-time knowledge about food preparation and storage provided by Extension faculty and its corps of master food safety advisors. Hundreds of other families benefit because of classes and workshops about food safety, where measurement of knowledge gain (25-30%) should translate to reducing the risk of food borne illness by 10-15%.

Idaho's next generation of food service workers are better prepared to protect public health through food safety courses taught in high school. Similarly, entrepreneurs and new food industry businesses will be more successful, by knowledge that reduces risks to public health, the implications of which would threaten the viability of any fledgling business.

d. Since developing our 2000-2004 plan of work, University of Idaho Extension has become more focused to address the goals related to a safe, secure food and fiber system. Our plan of work describes outputs (numbers of contacts, classes, publications, etc.) that have all been exceeded, despite a significantly reduced workforce. These outputs are documented in more targeted program areas than originally planned.

   Our efforts to document success, however, have shifted to measuring outcomes that result because of our programs. In this regard, we are experiencing success to a degree not envisioned in 1999. Because of changing customer needs and faculty resources, some issues, such as food resource management, have received greater attention since the development of our plan of work; while other topics, such as food preservation, have been increasingly managed through volunteer resources.

e. The **total** investment in the food security and safety goal is approximately $1,306,720. This includes $364,680 derived from the **FNS** food stamp nutrition education program; approximately $48,000 in other grants; $139,320 from **EFNEP** (Smith-Lever 3(d); $62,220 from **Smith-Lever (3) b,c**. **State** appropriations for agricultural research and extension invested approximately $567,892 (includes the FNS-match requirement); and $124,300 from **County** government.

Key Theme – Food Accessibility and Affordability

a. Education to improve food accessibility and affordability is provided as family financial management education for low income families, as part of Idaho's EFNEP and ENP (Food Stamp Nutrition Education) programs.

b. Participants in EFNEP and ENP programs were surveyed to learn about behavioral changes adopted because of participation in Extension educational programs.

   Food Resource Management Practices
   Ninety-four percent of graduates showed improvement in at least one or more of the food resource management practices (i.e. plans meals, compares prices, does not run out of food, or uses grocery lists). Specific results include:
   - 80% (187) more often plan meals in advance.
   - 68% (159) more often compare prices when shopping.

- 55% (129) less often run out of food before the end of the month.
- 76% (176) more often use a list for grocery shopping.

Money Management Practices

Improvement occurred in the following money management practices:

- 70% more often kept track of expenses by using a written spending plan after participating in ENP.
- 63% more often set aside money for emergencies/occasional bills after ENP.

c. Approximately 20% of Idaho's ENP (FNS food stamp nutrition) and EFNEP investment (approximately $173,402 in federal grants, and $146,000 in State match) is targeted to food accessibility and affordability. Thousands of Idaho families are at reduced risk of food borne illness because they were able to receive just-in-time information about safe food preservation and preparation practices.

d. EFNEP and ENP (Food Stamp Nutrition Education) programs are statewide, in partnership with national programs.

Key Theme – Food Quality

a. The UI Pesticide Coordinator presented "Pesticides and Organic Production, Their Impact on the Food Supply" to volunteer Food Safety Advisors. The class focused on the impact of pesticide usage on the food supply and the relationship to food quality, safety and pesticide residues, including:
   - current information and data on pesticide usage by crop type; registration status of pesticides; regulatory issues surrounding the pesticides and what that means to the US food consumer.
   - pesticide registration process and what type and how safeguards are built into that process.
   - food-type consumption and potential dietary pesticide exposure by consumer category (i.e. infants and children, teens, adults, lactating females, elderly).
   - food processing and the impact to potential pesticide residues in food.

   This class is the basis of a program for consumers that will be offered to all FCS (and other interested) Extension Educators in 2004.

b. The objective of "*Pesticides and Organic Production, Their Impact on the Food Supply*" is to inform extension educators and volunteers on the pros and cons of pesticide use for commercial food production. Currently (and near future), commercial food production depends on synthetic pesticides to maximize production and provide profitable and economic food for the U.S. Educating those who communicate to the public should provide awareness, ultimately to the consumer, that our food is safe, due to the safeguards built into the regulatory system. Organic production is not as innocuous and most people think. The purpose of this program is not to promote one type of pest management over another type, but to educate what the reality is and what the real risks are to food safety utilizing any system of pest management. The outcomes of this program fall into the "short-term" outcome category. We are raising awareness and increasing knowledge for the clientele.

Some clientele will have the motivation to educate others, therefore bringing a change to consumer thinking on this topic.

c. Support for this program is derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. This program is statewide.

Key Theme – Food Safety (for consumers)

a. Twenty-one classes and workshops on a variety of food safety topics were reported. These included lessons on food preservation and food storage, checking the accuracy of canner gauges, and food safety programs for specific audiences, such as seniors and Head Start staff. Classes were delivered by Extension Educators, or by Master Food Preservers under the direction of Educators. A total of 351 face-to-face contacts were reported for these classes and workshops. Five food safety articles were produced for Extension's bi-monthly newsletter.

   Answering food safety questions is an on-going, year-round project, but increases during food preservation season; time per call is increasing, questions are more serious than in the past. Phone calls are used as "teachable moments." Although the volume of calls is not recorded in detail by all responders, faculty report that answering food safety phone calls and questions from the public is a major food safety activity. Nearly all counties with an FCS educator, and some without FCS educators, field these calls. Three counties reported the number of food safety phone calls for a minimum of three months. These counties averaged between 11 and 95 phone calls per month. One county educator tracked the entire year's phone calls and reported 516 phone inquiries. A great deal of time is spent to research and provide accurate answers for these questions.

b. Food safety programs raised the awareness of safe food handling methods for consumers. Some specific examples include:
   - UI Extension partnered with the local Community Action Agency on program to preserve tomatoes, peppers and onions, as these are popular vegetables in the Hispanic culture. There was a positive response to the program, with the majority of participants staying after the meeting to find answers to related questions. Twelve food preservation bulletins in Spanish were given to attendees.
   - Current reliable food safety information was provided to home food preservers in a county without an FCS Educator in a successful program to extend Extension resources into the community.
   - Test scores indicate knowledge gain. For example, after taking a Food Preservation Update program, participants had average pre-test score of 73% (range 60-90%) and average post-test scores of 96% (range 80-100%).
   - The number of consumer questions and canner gauges tested have increased, indicating that extension is considered a reliable source for research based information.
   - Program participants that own food thermometers indicated they would be more diligent about checking that meats, poultry and reheated foods reached the correct temperature

before serving. Those members that did not have thermometers said they would purchase and use thermometers. Seventy-four percent indicated they would try at least one suggested storage method for storing some of their garden produce.

- Measuring the impact made by answering food safety telephone questions is difficult. However, telephone calls received are considered to be the ultimate "teachable moment". Those individuals calling to request information are highly motivated to learn something new about the topic. These people gained an awareness and understanding of food safety practices; they improved their food-handling skills and their actions can result in a reduction in their home food safety problems.

c. Support for this program is derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. This program is statewide

Key Theme – Food Safety (for limited income consumers)

a. Approximately 11% of Idaho adults have income below the poverty level. Twenty-one percent of Idaho children live in poverty, compared to a 19% nationally. On a 3 year average, 12.7% of Idahoans live in poverty (11.6% nationally). Limited income families may have difficulty following advice such as "when in doubt, throw it out" and may have limited access to food safety tools, such as adequate refrigeration and food thermometers. Specifically, food safety topics include sanitation, hand washing, thawing foods properly, cooking temperatures, use of meat thermometers, cross-contamination, and food storage.

Both the Idaho *Extension Nutrition Program (*ENP-Food Stamp Education Program) and *EFNEP* are community-based education programs that provide instruction to low income adults, youth, and seniors in food safety, leading them to improved health and well-being. Each of the 27 counties where ENP is delivered involves collaboration with 15-20 human service agencies. These agencies provide food and safe shelter, and Extension Educators and ENP paraprofessionals deliver the education to stabilize and move the family toward self-sufficiency. During FY2003, some of the collaborating agencies include: WIC, Head Start, Health and Welfare, Schools, Job Service, Food Banks, and Migrant Council. A complete listing of all 314 collaborators can be found in the ENP FY2003 Annual Report.

Individuals who are exposed and/or participate in ENP are categorized as indirect or direct contacts. The total number of ENP contacts for FY2003 was 509,117 as shown in Table 1.

Table 1. Total number of ENP contacts

Type of contacts	Number of contacts
I. Direct contacts (One-time contacts + enrolled contacts)	84,910
II. Indirect contacts	424,217
Total number of contacts	509,117

Table 2. Number of people who experienced a direct one-time contact with the *Extension Nutrition Program* (ENP), through classes, workshops, etc.

Ethnic Characteristics	Adults	Youth
White	28,762	37,054
Black	98	793
American Indian/Alaskan	314	153
Hispanic	4,810	12,464
Asian/Pacific Islander	244	218
Totals	**34,228**	**50,682**
Total number of one-time participants = 84,910		

Table 3. Gender and ethnic characteristics of enrolled adult participants.

Ethnicity	***Female***		***Male***		***Total***	
	#	%	#	%	#	%
White	415	65	78	12	493	78
Black	3	0	1	0	4	1
American Indian/Alaskan	13	2	5	1	18	3
Hispanic	100	16	15	2	115	18
Asian/Pacific Islander	5	1	1	0	6	1
Totals	536	84	100	15	636	100

Enrolled youth participants: The largest numbers of these youth participants (4,446) were reached through the ENP school enrichment program. Table 4 shows the ages of the youth enrolled in ENP and Table 5 shows the gender and ethic characteristics of youth.

Table 4. Age of participating youth:

Age	Number	Percent
Under 6	976	14%
6 - 8	2,318	33%
9 - 12	3,332	48%
13 - 15	267	4%
16 - 19	54	1%
Total	6,947	100%

Indirect contacts: ENP had 424,217 indirect contacts in FY 2003. Indirect contacts include the number of people indirectly exposed to a range of educational materials, such as newsletters, informational handouts, videos, promotion on the local cable television station, and brochures.

Outputs for EFNEP

A total of 729 individual youth were reached by EFNEP special interest 4-H, with 4,768 contacts. Nineteen youth attended 4-H Camp on scholarships. Many of the youth entered posters or food products in their local fairs. Nine youth received Best of Show Awards at the fairs. Thirty-two youth completed pre- and post-tests during the year. They indicated on their post-test that they chose soft drinks and fruit flavored drinks 13% less often for their beverage choice than when they took the pre-test. They indicated they were 12% less likely to have candy or chips everyday at post-test than when they took the pre-test. The youth were 11% more likely to have eaten breakfast on their post-test. The youth were 12% more likely to wash their hands with warm water and soap at post-test than at pre-test.

A total of 696 clients, with 2,505 family members participated in EFNEP classes in FY2003. Clients experienced 11,152 contacts with EFNEP educators. Twenty-nine percent of the clients reached were minorities (20% being Hispanic, 7% American Indian, 1% Black, and 1% Asian). Twenty-three percent were parents under the age of twenty. In FY2003, 416 clients graduated from the program.

b. Outcome data has been collected on: (1) enrolled adults—includes graduates, those who left the program, and those continuing with the program; and, (2) graduates of the program who complete a retrospective survey. Of the 636 participants enrolled in ENP in FY2003, 233 adults graduated from the program (having completed at least 6 core lessons); 246 adults left the program before graduating; and 157 participants are continuing with ENP at the beginning of FY2004. Data was collected on the 233 adults who graduated from the program that completed a retrospective survey, which measured pre and post-changes in nutrition, food safety, and food resource management practices.

   Improved food safety knowledge was reported by 66% of graduates who indicated that after the ENP lessons they were less likely to thaw meat at room temperature. In the area of food safety behaviors, 60% of participants showed improvement in one or more of the food safety practices.

   When participants were asked if they washed utensils and surfaces, there was no change in behavior from entry to exit for 61%, which means that ENP graduates reported that they were successfully washing utensils and surfaces at entry into the program. The 39% who needed to improve this practice reported that they had improved by the end of the program. When asked whether they washed hands before preparing food, 167 (72%) reported at entry that they already were doing this. Of those who needed to improve, 27% did so by the time they graduated.

c. Approximately 30% of Idaho's ENP (FNS food stamp nutrition) and EFNEP investment (approximately $260,102 in federal grants, and $220,000 in State match) is targeted to food safety.

d. Food safety is a statewide program, and is a part of the national EFNEP and Food Stamp Nutrition Education programs.

Key Theme – Food Safety for Food Service Workers

a. Safe handling of food in restaurants and institutional kitchens is essential for protecting public health. Safe food in restaurants and institutions requires specific knowledge, as identified in Idaho's *Unicode*. Food service establishments are required to have at least one food safety and sanitation certified employee who has completed training approved by the Food Protection Program, Department of Health and Welfare.

   Food service establishments need employees trained in the safe handling of food. It takes only one well-publicized food safety problem to damage a reputation and cause embarrassment, loss of customers and sales, increased insurance rates, and increase costs associated with liability. A special training need exists among high school students. High school students comprise a major portion of the workforce in the fast food industry; more than 70% of high school students work in food service as their first job. A number of Idaho high schools have in-school cafes, snack bars and bakeries run by students.

   University of Idaho Cooperative Extension has developed two training programs that meet the criteria to issue approved food safety and sanitation certificates:
   - *Practical Food Safety for Food Service Supervisors* is a 4-hour curriculum intended for adult food service workers.
   - *Ready, Set Food Safe* is a 10-hour curriculum intended for high school students.

b. For the *Ready, Set, Food Safe* curriculum, a pre- and post-test of thirteen questions is used to see if knowledge has significantly increased after participating in the program. Analysis showed that post-test scores (average 90% correct) were significantly higher than pre-test scores (average 72% correct). After completing 6 to 9 hours of classroom instruction and hands-on activities, a rigorous examination is administered. Students who score 80% or greater receive a food safety and sanitation certificate (food handlers card). In 2003, 727 youth participated and 506 youth received certification in classes taught by both high school teachers and extension educators. *Ready, Set Food Safe* curriculum has been adopted by 15 Idaho high schools Idaho.

   In the abbreviated version (90-minute) of *Ready, Set, Food Safe,* a short survey was developed with four questions about general bacteriology, cooking, and cleanliness. The pre-post survey was administered to 4 high school classes. The changes from before and after the class were widely divergent. The freshman/sophomore foods and nutrition class had the least improved scores. Most improvement was made in understanding the temperature range of the "Danger Zone"; most students were aware of the cleanliness issues of wearing gloves and that something that is visibly clean isn't necessarily sanitized.

   In the past, a Burley area deli had borrowed videos from the Extension Office and shared handouts provided by UI Extension. This year, Extension training on safe food handling practices was requested. The 45-minute update covered hand washing, safe food surfaces, and how to maintain them. As a result of the training, one owner reported a positive change in hand washing procedures by three workers and the action she took to upgrade a food cutting board.

c. Support for this program is derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. Food safety is a statewide Extension program.

Key Theme – Food Preservation

a. Seventy general food preservation classes were offered by Extension around the State, with titles like *Home Canning Made Easy*, *Put Your Best Food Forward*, *Home Preserving Safely*, *Food Preservation Basics*, and *Food Storage: Store What You Use*. Extension offices continue to sell the *USDA Complete Guide to Home Canning* and 19 different University of Idaho and PNW food safety publications. Canyon County tracked distribution of publications at the Western Idaho and the Canyon County Fairs, including 125 food safety/food preservation publications sold and more than 1,017 free brochures given, (including 176 copies of the USDA publication, *Cooking for Groups,* 23 of which were in Spanish). Magnets (69), recipe cards (225), and instructional pamphlets (500) concerning the use of food thermometers were also distributed in the fall of 2003.

   A number of counties also provide accuracy testing of pressure canner gauges, particularly when no one else in town offers this service. Many Educators would prefer not to do this (it should be the responsibility of the canner manufacturer to provide service for their product), but it has been a traditional extension offering. In some areas, local religious and civic organizations advertise and support the pressure gauge testing and other food preservation services and activities. The service raises awareness of safe home food preservation methods and sources of information.

   Classes taught for New Food Safety Advisors included: *Please Join the Food Safety Advisor Program, Overview and Basics of spoilage and preservation, Canning Acid Foods, Pickling, Giving a Demonstration and Jams and Jellies, Drying and Freezing*. Classes taught for Advanced Food Safety Advisors included: *Flavored Oil and Vinegar, Packaging Home Canned Foods, Food Safety Training on the Food Thermometer Project, Grains Training, Pesticides, Judges Training, Fair Training, Germ City,* and *Ball Bluebook.* Classes Taught by Food Safety Advisors included: *Home Canning Made Easy , Mother Daughter Canning, Gifts from Your Kitchen ,* and *Gifts from Your Kitchen*.

   Advanced Food Safety Advisors taught 37 classes in 2003 and Food Safety Advisors taught 2 classes. Approximately 572 advisors and residents participated in food safety classes.

b. FSA/MFP volunteers and contributing faculty have made food safety education available through UI Extension. Consumers and families have received current and reliable food safety information. More home food preservers have produced safe, high quality foods for their families. Examples of this follow:

   In District I, Benewah County's Open Class Canning Superintendent revised exhibitor rules and judging criteria to conform to USDA Home Canning recommendations as a result of a

Put Your Best Food Forward class offered by UI Extension. Those changes were conveyed to numerous exhibitors and people attending the county Fair.

In District II, volunteers donated more than 1,000 hours answering questions and educating the public on food safety. First year Food Safety Advisors donated 222 hours and Advanced Food Safety Advisors donated nearly 800 hours. They were in contact with 2,476 people from October 1, 2002 to October 1, 2003. (First year Food Safety Advisors contacted 496 people and Advanced Food Safety Advisors contacted 1,980 people.)

c. UI Extension critical issue funds ($3,000) helped Extension Educators upgrade the Food Safety Advisor Program. Primary support for this program is derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. This program is statewide.

Key Theme – Food Borne Illness

a. Hand washing is a key behavior to promote food safety, personal health, and disease prevention. Hand washing is important in the prevention of food borne illness and transmission of pathogenic bacteria and viruses that include *E. coli, Campylobacter, Salmonella*, *Shigella*, and Hepatitis A. Studies support the need for behavior change for both children and adults, as well as for effective hand washing education.

Germ City is a program/exhibit that teaches and motivates children and families about the importance of hand washing for good health and food safety. The program was piloted in Idaho in 2000 and is currently being developed for more extensive use as a result of Idaho's participation in a CSREES National Food Safety Initiative grant, *The Germ City Hand Washing Program: Clean Hands, Healthy People*.

b. Germ City has become a very popular education tool in Idaho and is often used in County, Resource and Health Fairs across the state. The exhibits were displayed at five county fairs in 2003, reaching about 500 Idaho families each fair.

Participants in *Germ City* have learned the importance of proper hand washing habits. Some adults who viewed the exhibit thought they did a good job of washing their hands. They were surprised at how many "germs" are still on their hands after they return to the exhibit after washing. Canyon County reported outcomes from self-reporting of participants asked to indicate their willingness to increase their efforts at hand washing by placing a self-sticking dot next one of 6 categories (listed below). Approximately 437 fair-goers provided data for the evaluation.

Table 5. Numbers of Germ City participants reporting changed behavior.

Category: Wash hands more often following:	Number of Children Selecting Category	Number of Adults Selecting Category
After coughing & sneezing	52	23
After playing or working outside	51	26
Before preparing or eating food	42	27
After using the restroom	82	30
After playing with animals	112	34
Nothing	22	12

c. UI Extension Critical issue funds were used to buy another *Germ City* unit for Idaho. Support for this program is derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. Germ City is a statewide program.

Key Theme – HACCP

a. The development of successful new businesses and expansion of existing business are crucial for creating employment and adding tax base and services in Idaho communities. Knowledge of food safety principles and regulations is required of those who plan to sell food to the public at all points in the food chain, from production to processing to distribution to food service and retailing. If food companies do not have this knowledge, the devastating effect of a food borne illness outbreak and the resulting loss of business may be the result.

   During the reporting year, the UI Extension Food Processing Specialist provided assistance to 12 different Idaho food industry clients, sometimes collaborating with other specialists. This assistance was in the form of 22 individual projects, with some clients requesting more than one project. The names of the companies involved are kept confidential, but the types of assistance include: Development of HACCP plans and prerequisite programs (7), Food safety audits (2), Microbiology lab (1), Wastewater disposal (5), New product development (1), Improved efficiency of production (5), Thermal process workshop (1).

   Other industry-related assistance includes a food microbiology workshop and direct marketing workshops: “*Meeting the Needs of Consumers*” and “*Food Trends for Small Producers*."

b. The following statements describe some of the impact of individual projects conducted for the food industry:
   - Review of client's microbiological laboratory and provision of recommendations was critical to meeting a key customer's quality requirements and resolving a dispute

concerning procedure accuracy. Resolution of this issue will ensure the continuance of this key account.

- Completion of training and certification of employees is a prerequisite for client running a low-acid thermal processing operation.
- Project assisted client developing a plan for reducing waste in the customer ordering process. At completion of value stream mapping, client identified an opportunity to more accurately replenish inventory of key customers by getting order information to value added area as quickly as possible. A document was generated to identify future opportunities for lean implementation.
- Employees were trained in the concepts and tools of Lean Manufacturing. Completion of the workshop prepared the Company for future Lean Systems Implementation.
- Completion of project prompted Client to improve HACCP (Hazard Analysis Critical Control Point) Plan, and implemented HACCP System on the plant floor. These benefits will ensure that the Client's customer requirements are met, and that a knowledge transfer will take place between this operation and other Company plants.
- Completion of the project enabled the client to identify opportunities in plant operations and potential solutions. Implementation of recommendations is projected to have a positive impact on increasing production capability and efficiency of the operation.
- Completion of project ensured that the client meets State and Federal regulatory requirements for meat and poultry processing, assisted the client with providing customers with safe food products, and addressed one of the key hurdles to growth of the client's business.
- Client will demonstrate responsible oversight of their wastewater land application facility by meeting the Annual Report compliance requirement of their wastewater land application permit. Submission of the report by the deadline will also ensure compliance to State regulations, a prerequisite to continued wastewater land application operations.
- Completion of project provided company with analysis of opportunities to improve management of food safety and product quality; also updating the incoming potato quality-monitoring program. Recommendations to improve compliance with customer expectations and specifications, to reduce regulatory risk and product liability, and to prioritize next steps needs for constant improvement. Improved product quality due to improved monitoring of raw materials is expected.
- Completion of project provided the client with a clearer picture of resources required for building a cheese business.
- Completion of the project was a prerequisite for a large contract with a key client customer. Client will now be in the position to make a nationwide product rollout in retail grocery stores.
- Completion of project assisted client in a testing program critical to meeting customer requirements in the area of food safety and quality
- Wastewater Land Application Permit (WLAP) is a regulatory requirement that must be completed annually for plant to operate. Assistance provided by TechHelp provided cost-effective means of renewing permit.
- Completion of project and implementation of findings will have a significant impact on shipping expenses and on improvement of customer service.

- Client was provided with foundation information needed to go forward in developing new products, which will ultimately expand sales and profitability.
- After the Direct Marketing Conference "Food Trends for Small Producers" panel, there were five requests for notes and resource citations. Ten questions were asked during the question and answer period after the panel members presented

c. This project is supported through Idaho's Manufacturing Extension program.

d. The project is statewide.

GOAL 3 – A HEALTHY, WELL-NOURISHED POPULATION.

Overview

a. Outputs: During 2003, 18 individual faculty and staff from the UI College of Agricultural and Life Sciences reported a significant portion of their time devoted to projects reported under the health and nutrition goal. There are 38 paraprofessionals that administer the EFNEP and ENP lessons on nutrition. Faculty produced 44 publications and contributed to the delivery of 81 faculty presentations (workshops, field days, or other educational events) and hundreds of EFNEP and ENP consultations. In total, participating faculty estimate the total number of direct contacts with stakeholders at 104,176.

b. Outcomes: UI Extension provided education about human health and nutrition to youth, seniors, limited income families, parents, working parents, and various targeted audiences. These audiences learned about the dietary guidelines, convenient ways to improve their diets, and the relationships between nutritional intake and certain nutrient-related diseases including osteoporosis, diabetes, and obesity. Youth learned the importance of choosing what they eat and drink, and the role that exercise plays to ensure a long, healthy life. Older youth learned about body types, the importance of balancing nutrients, and the health benefits of regular meal times. Limited resources audiences learned to read nutrition labels, plan nutritional menus, and to shop from a list prepared to reflect nutritional menus. Parents learned to plan and prepare quality foods and meals that require less time and meet the nutritional needs of their families. Parents of young children learned the importance of nutrition for healthy child development, and how to accommodate children's unique nutritional needs. Seniors learned the value of certain foods, and the importance of meal frequency as their metabolism changes.

c. Impacts: Improved dietary intake was measured for low income, seniors, youth, and traditional audiences. Among the improvements were: increased intake of fruits and vegetables (average 70% increase in the number of people who ate recommended number of servings for both ENP and EFNEP); an 125% increase in the number of EFNEP participants consuming calcium-rich foods; 100% participation of seniors eating at least three meals per day; and 50% or greater improvement by that audience to eat recommended servings of fruits, vegetables and calcium-rich foods. Participants in diabetes-nutrition programs were even more responsive to dietary recommendations, with 70% adopting intake management systems and 80% increasing their intake of fruits and

vegetables. Evaluation of youth learners indicates that intake of high-fat foods has declined, and juices have substituted for soda in many young people's diets.

Although data will not be available for many years, improved eating habits can have a significant impact on health care costs for individuals, families, and for society.

d. Since developing our 2000-2004 plan of work, University of Idaho Extension has become more focused to address the goals related to human health and nutrition. Our plan of work describes outputs (numbers of contacts, classes, publications, etc.) that have all been exceeded, despite a significantly reduced workforce. These outputs are documented in more targeted program areas than originally planned.

   Our efforts to document success, however, have shifted to measuring outcomes that result because of our programs. In this regard, we are experiencing success to a degree not envisioned in 1999. Because of changing customer needs and faculty resources, some issues, such as nutrition related diseases, have received greater attention since the development of our plan of work; while other topics, such as meal planning, have become better integrated across the spectrum of Extension programming.

e. The **total** investment in Extension programs that address the human health and nutrition goal is approximately $1,416,179. This includes $364,680 derived from the **FNS** food stamp nutrition education program grant; approximately $235,350 in grants from other sources (including CSREES); $139,320 from **EFNEP** (Smith-Lever 3(d); $45,500 from **Smith-Lever (3) b,c**. **State** appropriations for agricultural research and extension invested approximately $513,311 (includes the FNS-match requirement); and $118,000 from **County** government.

Key Theme – Human Health

a. Diabetes

   In Idaho and the U.S., diabetes is the sixth leading cause of death. Approximately 56,000 adult Idahoans have been diagnosed with diabetes, and approximately 28,000 are not yet diagnosed. Approximately 6.1% of adult Idahoans (84,000) have diabetes (2002, BRFSS). Individuals who do not follow a prescribed treatment for diabetes are more likely to suffer from heart disease, stroke, high blood pressure, blindness, kidney disease, nervous system damage, amputations, and dental disease. The total cost of diabetes in Idaho, including direct medical expenses and indirect costs, such as disability, work loss and premature mortality is estimated at $468 million annually. Research indicates that effective diabetes education can not only reduce the number of complications from diabetes but also decrease the overall cost of the disease.

   There have been 1,630 individuals who received diabetes education from Idaho Extension, including 1,299 females and 331 males. Of those, 1,587 were Caucasian, 16 were American or Alaskan Indian, 22 were Hispanic, 3 were Black and 2 were Asian/Pacific.

   Diabetes education materials developed and used by UI Extension faculty include: three curricula by UI extension faculty: (1) *The Healthy Diabetes Plate*; (2) *Healthy Eating with*

Diabetes, and (3) *Insulin Resistance Diet*. The curriculum, *The Healthy Diabetes Plate*, was published as a peer-reviewed curriculum through Ag Communications in January 2003. Information about the effectiveness of the *Healthy Diabetes Plate* and *Eating Healthy with Diabetes* has been disseminated through international and national conferences and Impact Statements. Additional 2003 publications include: one journal submission, four abstracts and proceedings, and two non-peer reviewed Impact statements.

Osteoporosis & Got Calcium

Osteoporosis and low bone mass are a major public health threat for almost 44 million U.S. women and men aged 50 and older, representing 55 percent of the Americans in that age group. By the year 2010, it is estimated that over 52 million women and men in this same age category will be affected and, if current trends continue, the figure will climb to over 61 million by 2020. In 2002, it is estimated that over 10 million people already have osteoporosis. Approximately eighty percent of these people are women. This figure will rise to almost 12 million individuals by 2010 and to approximately 14 million by 2020 if additional efforts are not made to stem this disease, which may be largely prevented with lifestyle considerations and treatment when appropriate.

Revisions to the osteoporosis curriculum were completed in 2003, and classes were presented at three locations for 42 individuals. All were female; 41 were Caucasian and 1 was Hispanic. One peer-reviewed article was published.

The most recent Continuing Survey of Food Intakes by Individuals 1994-96, revealed that only about 38% of males and 20% of females aged 6 to 11; and only 32% of males and 12% of females ages 12 to 19 consume 100% of the adequate intake for calcium.

There were 105 youth that participated in the Got Calcium lessons: 55 were male and 50 were female; 90 were Caucasian and 15 were Hispanic. The four lesson curriculum content, activities, and evaluation tools were all revised based on pilot study data and suggestions from peer reviewers and editor.

Weight Management

The University of Idaho Extension has partnered with **Montana** and **Wyoming** in a unique four-year community-based research, development and education project called Wellness IN (WIN) the Rockies to reverse the rising tide of obesity in three states. This project addresses nutrition, physical activity, and body image issues to help people meet their weight loss goals. In Idaho, the demonstrator and comparator groups are located in Preston and American Falls, respectively. This report covers the third year of this grant.

The WIN project uses three curricula to teach human health:

- *A New You, Health for Every Body*. This 10 lesson curriculum for adults covers the topics of healthful and pleasurable eating, physically activite living and self-acceptance and size acceptance.
- *Full of Ourselves*. This curriculum targets girls in 6^{th}-8^{th} grade and focuses on body size diversity and acceptance of every body size.

- *WIN Kids Fun Days*. This curriculum is designed primarily for youth ages 8 to 12 and is designed to be conducted for outdoor venues and include activities that cover pleasurable and healthful eating, snacks to make and enjoy, body image, and physical activity.

The total number of contacts through WIN the Rockies included 284 individuals, of whom 129 were face-to-face and 155 were over distance. Of the 129 FTF contacts, 83 were adults and 46 youth. All of the contacts were Caucasian. There were 120 female and 9 male contacts. There were 155 non-FTF contacts in the pedometer program.

Adult assessments were conducted in January 2003 in both demonstrator and comparator communities. Data collected included: height, weight, demographic information, 6-minute walk test, resting heart rate, exercise heart rate and completion of surveys which covered eating attitudes and behaviors, physical activity, multidimensional body-self, food frequency questionnaire and body-size attitude assessment tool. Youth assessments were conducted on 108 fifth-grade students. Data collected included: heights, weights, one-mile run, eating behavior and attitude assessment survey.

Pedometer Programs: *Preston on the Move* is a walking program and has approximately 138 participants. Individuals purchase a pedometer and are encouraged to complete walk logs which they mail to the Idaho State Project Coordinator.

Information about this project has been disseminated through two refereed publications, five presentations, four poster presentations, and two popular articles.

b. Diabetes

Outcomes include survey results completed by participants of the *Healthy Eating with Diabetes* curriculum plus data currently being analyzed by research participants of the Healthy Diabetes Plate and evaluations completed by participants of the *Insulin Resistance Diet* classes.

1. Results indicate that more than 90% of participants who complete these classes:
   - Are more familiar with the American Diabetes Association's Standards of Care;
   - Feel the changes they have made as a result of this program has improved their blood sugar levels;
   - Feel more conscious about trying to eat a lower fat diet;
   - Are more confident about planning meals;
   - Feel more confident about buying groceries;
   - Would encourage other people to take "Healthy Eating with Diabetes."

2. Results indicate that more than 80% of participants who complete these classes:
   - Have increased their consumption of fruits and vegetables;
   - Feel more confident about managing their diabetes.

3. Results indicate that about 70%

- Feel that the changes they have made as a result of this program have improved their cholesterol levels;
- Are still using the Idaho Plate Method or aspects of the Idaho Plate Method when sitting down to breakfast/lunch/dinner.

4. Actions that individuals who complete the *Healthy Eating with Diabetes* classes plan to take include: have their blood tested, have an eye exam, visit a physician, dietitian or a Certified Diabetes Educator, and follow the Idaho Plate Method.

Eight Extension faculty participated in a research project to teach the four-lesson curriculum and collect data on participants' changes in knowledge and in behavior as a result of participating in these lessons. Data currently being analyzed on 108 participants: (1) demographic information, (2) diabetes self-care measures, signs and symptoms of diabetes, (3) making changes to their diabetes personal care, and (4) ability to plan meals using the Idaho Plate Method.

Results from 33 participants indicated an increase in knowledge and strategies in learning how to manage their insulin resistance. In addition, participants rated the presentations and 98-100% indicated that the information met their needs, that the presentation was clear and organized, that the instructor was well-informed, that the lessons held their interest and that the instructor encouraged questions and interaction with participants.

Weight Management

Outcomes from the WIN in the Rockies project are currently being analyzed. Outcome data collected on the "A New You" curriculum indicate that the materials, quality of the program, usefulness of activities and handouts, program value in terms of time, money, and energy averaged a rating of 4.8 on a 5-point scale. Also, 100% of participants indicated that they benefited from participating in the program, that the program helped them try some new practices and ways of thinking, and that they would recommend the program to others. A follow-up assessment conducted three months after the completion of the program showed that: 94% benefited from the program, 100% tried some new practices or ways of thinking, 100% shared information with others (family, friends, coworkers, and others), each sharing with an average of 12 other people.

c. The Idaho Diabetes Prevention and Control Program provided funds to pay for the curriculum, The Healthy Diabetes Plate. Pomona Grange provided $200. Wyoming, Montana, and Idaho received a $4.3 million grant (October 2000-October 2004). Idaho invested approximately $160,000 during the reporting year. Two Idaho Community grants were funded including *Fit Trail System* for Preston, at $2,500, and "*The Me I Want To Be*" in Caldwell, ID at the Southwest District Health Department. *Got Calcium* received $1,930 from the UI School of Family & Consumer Sciences. Additional support is provided by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. Idaho's WIN is a partnership with **Montana** and **Wyoming**. Training for ENP and EFNEP program personnel was conducted in collaboration with **Oregon** and **Washington**. Other programs are statewide.

Key Theme – Human Nutrition

a. ENP

Both the Idaho *Extension Nutrition Program (*ENP-Food Stamp Education Program) and *EFNEP* are community-based education programs that provide instruction to low income adults, youth, and seniors in nutrition, food safety, and money management, leading them to improved health and well-being.

Each of the 27 counties where ENP is delivered involves a collaboration with 15-20 human service agencies. These agencies provide the food and safe shelter, then Extension Educators and ENP paraprofessionals begin the education process to stabilize the family and move them toward increased self-sufficiency. During FY2003, some of the collaborating agencies include: WIC, Head Start, Health and Welfare, Schools, Job Service, Food Banks, and Migrant Council. A complete listing of all 314 collaborators can be found in the ENP FY2003 Annual Report.

Individuals who are exposed and/or participate in ENP are categorized as indirect or direct contacts. The total number of ENP contacts for FY2003 was 509,117 as shown in Table 1.

Output data for the ENP and EFNEP programs are presented in the discussion of the **Key Theme-Food Safety**, and include the same populations described for human nutrition.

Planning Healthy & Quick Meals and Menus

A needs assessment was conducted by each of four extension districts in Idaho to determine what topics individuals were most interested in learning about in the area of health and nutrition. The first priority was to learn how to plan meals and menus. Committee members conducted a search for a curriculum that would meet this need. However, no curriculum could be found that contained all the topics requested by stakeholders, and faculty elected to develop a new curriculum. The curriculum "*Meal Time in Less Time*" was developed, published and translated into Spanish. This year, 147 adults received education on meal planning and preparation. Of those, 145 were female and 2 were male; 146 were Caucasian and one was Hispanic.

Dietary Guidelines

The majority of Americans do not follow dietary guidelines developed by the Departments of Health and Human Services (HHS) and Agriculture (USDA). A study released by the Centers for Disease Control found that more than 60% of American adults are not regularly active, and 25% of the adult population are not active at all. The most recent Continuing Survey of Food Intakes by Individuals (CSFII) indicates that when most Americans eat, they do not build a healthy base or choose sensibly. Approximately 20% consume the recommended fruit and dairy servings, approximately 30% consume grain and meat serving recommendations, and 36% meet vegetable serving recommendations.

This year 4,401 individuals received education on the Dietary Guidelines for Americans in Idaho. Of those, 2,539 were female and 1,862 were male. Extension educators working in this project taught 2,664 youth and 1,737 adults; 3,964 were Caucasian, 242 were American Indian or Alaskan Natives, 155 were Hispanic, 28 were Black and 12 were Asian or Pacific Islander.

Senior Extension Nutrition Program

Older adults with varying degrees of malnutrition are found throughout North Idaho. Poor nutrition can lead to lost weight and strength, lessened immunity to disease, depression, confusion and disorientation. Older adults at nutritional risk tend to make more visits to physicians, hospitals, and emergency rooms. Malnourished patients have longer hospital stays and are admitted to hospitals more frequently. Malnutrition exacerbates frailty and debilitation, causing more time, energy and money spent on care giving.

Four out of five seniors have chronic diseases affecting their diets, one in five skip meals daily, 87% do not eat necessary fruits, vegetables and dairy products on a daily basis, 40% of have annual incomes less than $6,000; 33% live alone and 20% have trouble accessing necessary goods and services. Aging & Adult Services of North Idaho has made helping their high-nutritional seniors a top priority. Needs assessment data collected in North Idaho identified 349 (46%) of the agency's in-home service clients as being high nutritional risk. Aging & Adult Services of North Idaho has funded the University of Idaho Kootenai County Extension to deliver nutrition education to their clients.

In 2003, 95 participants were enrolled in the program, and three graduated. Additional publics learned about senior nutritional needs through presentations and poster displays.

b. ENP

Data was collected on the 233 adults who graduated from the program by having them complete a retrospective survey that measured pre- and post-program changes in nutrition, food safety, and food resource management practices. Improvements in nutrition practices included:

- 83% (191) improved in their of use food labels to make food choices.
- 73% (169) increased their vegetable intake to three or more servings per day.
- 70% (168) increased their fruit intake to two or more servings per day.
- 60% (140) more often ate low fat instead of high fat foods.

EFNEP

EFNEP participants took a pre- and post-program 24-hour food recall, and a pre- and post-survey as part of the program. Of the 416 EFNEP graduates, 94.5% reported positive change at exit, in at least one of the five food groups. Participants that ate 2-plus servings of fruit per day, increased from 35% at entry to 57% at exit. Recommended servings of vegetables also increased from 34% at entry to 57% at exit. Those who ate 3-plus servings of calcium rich foods increased from 16% at entry to 36% at exit. In general there was an increase in the nutrient content of the diet for those nutrients that were tracked with the EFNEP Reporting System (ERS).

Of the EFNEP graduates, 87% showed improvement in at least one of the nutrition practices that we track.

A total of 289 volunteers worked with EFNEP in FY2003 with an equivalent of 1.8 FTE. The adult program had 1.2 FTE and the youth program had .7 FTE.

Planning Healthy and Quick Meals and Menus

Outcome data has been collected on the first class of the *Meal Time in Less Time* meal planning and preparation series. Results indicate the following:

- 100% of respondents learned something new in several of the topics that were covered in the class
- 67% of respondents planned to begin utilizing meal planning
- 100% of participants agreed or strongly agreed that the information met their needs, the overall presentation was clear and organized, the program held their interest, and that the instructor was well informed and encouraged questions and interaction with participants.

Dietary Guidelines

Outcome data has been collected on: (1) individuals participating in the *Wellness Support Group*, and (2) participants of "*Eat the Alphabet from A to Z*".

Five of the *Wellness Support Group* classes were evaluated, showing positive results:

- The osteoporosis prevention class showed a significant increase in knowledge. All participants indicated that they would increase calcium intake and physical activity due to attending the class.
- The soy class post-test showed a high average score of 87%. Participants indicated that they would use a recipe demonstrated during the class and that the class was informative with easy ideas to implement.
- The quick and healthy meals class evaluation indicated that more participants would practice four of the time saving strategies, two of the lowering fat strategies, two of the increasing fiber strategies, two of the reducing sugar strategies, and four of the lowering sodium strategies taught in the class.
- The meal planning class evaluation was positive with all participants indicating that they would employ some form of meal planning in the future.
- Lastly, the eating on the run evaluation was positive with some participants indicating that they would employ some of the strategies presented in the class, such as stocking up on healthy snacks and using the countdown method to remember how many of each food group to eat daily.

From the *Eating the Alphabet from A to Z* program:

- 89% of the students knew the recommended intake for fruits and vegetables per day.
- 76% of the students had tried a new fruit or vegetable since participating in the program.

Senior Extension Nutrition Program

A retrospective pre-test survey was used to assess program impact. FY 2003 data

indicates the following behavior changes:

Indicator	Pre-	Post-
Participants eating 2 or more servings of fruit per day	53%	88%
Participants eating 3 or more servings of vegetables per day	50%	75%
Participants eating 3 or more servings of milk, yogurt, cheese or other calcium rich food per day	57%	88%
Participants drinking 8 - 1 cup servings of water per day	27%	50%
Participants washing their hands before preparing food	90%	100%
Participants who do not thaw meat at room temperature	57%	75%
Participants running out of food before the end of the month	10%	0%
Participants using community food resources like food stamps, senior centers or food banks	33%	38%
Participants preparing foods in way that makes them easier to chew and swallow	30%	50%
Number of times per day participants eat:		
1 time	3%	0%
2 times	10%	0%
3 times	53%	25%
4 times	30%	50%
5 times	0%	25%

c. A UI Extension critical issues grant for $5,035 was provided to develop and test the "*Meal Time in Less Time*" curriculum and have it published and translated into Spanish. Aging & Adult Services of North Idaho provided $15,500 for the Senior Nutrition program. The 4-H Endowment Fund provided $500 for healthy living. Approximately 50% of Idaho's ENP and EFNEP investment (approximately $875,000) is targeted to health and nutrition. The total support for these programs includes $1,462,057 through the Idaho Department of Health and Welfare: ($729,360 federal food stamp nutrition program, and $732,697 state appropriation). Total support for EFNEP includes $281,789 in Smith-Lever 3(d) funding from USDA-CSREES.

d. WIN the Rockies is a collaborative project with Montana and Wyoming. Training for EFNEP and ENP staff was conducted in collaboration with Washington and Oregon. Idaho participates in a national partnership to deliver EFNEP and ENP programs. Other activities in this topic are statewide or multi-county.

GOAL 4 – GREATER HARMONY BETWEEN AGRICULTURE AND THE ENVIRONMENT

Overview

a. Outputs: During 2003, 42 individual faculty and staff reported extension activities in programs focusing on natural resources and environment. These faculty contributed to the delivery of 265 faculty presentations, workshops, field days, or other educational events. One hundred-sixteen publications were reported for this goal, ranging from popular articles to scientific articles, and fact sheets to book chapters. Participating faculty estimate the total number of contacts with stakeholders at 4,231.

b. Outcomes: In the natural resources and environment goal area, Forestry program participants learned to manage private forests for sustainable production, and to harvest their timber with minimal environmental risks. Thousands of farmers and home gardeners have learned to monitor and manage plant pests in ways that generally require less pesticide than those who have not attended Extension IPM programs. Specific pest problems including apple maggot, rhizomania in sugarbeets, and early blight, late blight, white mold, pink rot and powdery scab in potatoes have been the subject of focused efforts by UI Extension to create and transfer knowledge to producers that results in more effective treatment options and improved economic returns to the growers. Use of the Treasure Valley Pest Alert Network has improved the management of pests across an agriculture-rich region worth multiple billions of dollars to the state and local economies.

   Waste management education was delivered to dairy producers and to waste management planners; with improved access and methods for teaching, knowledge transfer continues to improve. Applied research conducted by Extension has improved our knowledge about the consistency and content of animal waste applied to crops, and improves our ability to protect soil and water resources from excessive nutrient contamination.

   Through extension, farmers learned to monitor soil moisture using new technologies, and to adjust their irrigation according to precise data reflecting crop needs. Water quality education has brought new knowledge to people across Idaho, about how to protect their water supplies. The NEMO project has introduced land use planners to GIS as a tool for protecting future water supplies.

c. Impacts: Seventy-five participants in the 2003 LEAP program are now certified to sell their timber through mills that require LEAP certification of their loggers. Online proficiency training for nutrient management planners has increased the number of people trained to protect our environment. Sugarbeet growers demonstrated the capacity to save as much as $17 million in annual irrigation costs (extrapolated statewide) by adopting soil moisture monitoring technologies. Work with potato growers on irrigation efficiency promises to save as much as $57 million in annual irrigation costs (extrapolated statewide) by adopting soil moisture monitoring technologies. The volume of water conserved by these farmers can significantly impact in-stream flows and aquatic habitats in Idaho and downstream.

Irrigation scheduling in southeast Idaho has been used to reduce sediment and bacteria loads in surface water return, and groundwater sampling has been used to demonstrate to onion growers in southwest Idaho's areas of nitrate concern how they can manipulate irrigation systems to protect water quality.

d. Since developing our 2000-2004 plan of work, University of Idaho Extension has become more focused to address the goals related to greater harmony between agriculture and the environment. Our plan of work describes outputs (numbers of contacts, classes, publications, etc.) that have all been exceeded, despite a significantly reduced workforce. These outputs are documented in more targeted program areas than originally planned.

   Our efforts to document success, however, have shifted to measuring outcomes that result because of our programs. In this regard, we are experiencing success to a degree not envisioned in 1999. Because of changing customer needs and faculty resources, some programs, such as dairy waste management, have received greater attention since the development of our plan of work; while other topics, such as water quality, have become better integrated across the range of Extension programming.

e. The **total** investment in Extension programs that address the agriculture in harmony with the environment goal is approximately $3,424,300. This includes $675,600 in total **grant** activity[2]; {including $257,000 from USDA agencies; and $145,000 from other federal agencies; the private sector invested $65,500 in grants for competitive and profitable agriculture, and various commodity commissions invested $90,400. Grants originating from the state and local governments represent a $127,500 investment}. Appropriations from **Smith-Lever (3) b&c** total approximately $526,400. Various pathways directed **Smith-Lever (3)d** funds to support IPM ($132,367) and RREA ($60,775). **State** appropriations for agricultural research and extension total approximately $1,719,507. **County** governments invested $309,657 in Extension programs in support of this goal.

Key Theme – Air Quality

See Key Theme: innovative farming techniques for a description of Idaho's important air quality-related work.

Key Theme – Forest Resource Management

a. The UI Extension Forestry Tree Clinic was opened in February 2003. Three Master Gardener training sessions, four invited presentations, one poster session, and one guest lecture were delivered on diseases and diagnostics of tree pathogens. Daily remote consultations, walk-in consultations, and on-site consultations were delivered. Two editions of Woodland NOTES and the 2003-2004 Strengthening Forest Stewardship calendar were developed and delivered. Articles were written for Woodland NOTES, and for HomeWise. The UI Extension Forestry web site was maintained through weekly updates. Six

[2] Some amounts reported through this system include investment for multiple years, and are not specific to this reporting year. For specific expenditures, records are maintained with the one-audit protocols.

contributions were written for Idaho Farm Bureau publications. Three radio interviews were conducted.

Two and-a-half acres on the Sandpoint R&E Center are devoted to trials, with additional acreage at several Canadian sites. Each year, representative trees at each site are evaluated for dates of spring bud break and annual growth.

Needs assessment for 02-03 panhandle extension programs for loggers and for forest owners was gathered from stakeholders. Results were used to inform relevant programs in 2003. Three sessions of Logger Education to Advance Professionalism ("LEAP") each featured more than 20 hours of training designed to increase loggers' understanding and skills related to forest ecology, silviculture, and water quality. Enrollment is limited to 30 loggers per session, for an effective learning environment.

Forest products companies are seeking ways to improve operations on their own lands and other land where they harvest timber. To this end, most Idaho forest products companies are participating in the "Sustainable Forestry Initiative" (SFI), a national effort of the American Forest and Paper Association. Partially stimulated by SFI, a statewide logger education committee recently developed a new Idaho "Pro-Logger" program, administered through the Associated Logging Contractors of Idaho (ALC). Among other standards, the Pro-Logger credential requires participation in LEAP and 16 credits of continuing education annually. With increased emphasis on providing education for loggers, Extension has integrated logger education into other programs, as well.

As part of the Idaho Forest Stewardship program, a cooperative effort with the Idaho Dept. of Lands (IDL) and many other partners, UI Extension provided a series of workshops, field days and other educational activities in a variety of locations and times. This *Strengthening Forest Stewardship Skills* series was supported in part by grant funds from the USFS through the IDL. Educational activities strengthen forest owners' commitment and ability to implement practices that improve forest health and growth. Because of professional interest in these programs, and because of some landowners' increasing skill levels from attending previous Extension programs, we have sharpened the focus of selected forest stewardship programs to meet the continuing education needs of graduate foresters as well. For example, in 2002-2003, Society of American Foresters' "continuing forestry education" credit was provided for Extension programs titled: "Current Topics in Forest Health", "Scaling & Marketing Private Timber", "Pruning for White Pine Blister Rust" and "Growing Superior Tree Seed". In addition to Stewardship programs, many other Extension programs were given to groups requesting them, or in partnership with other agencies and organizations.

Woodland Notes, a forestry newsletter providing practical advice on forest management, is mailed out twice annually (once during this reporting period) to over 4,000 Idaho panhandle households. It is often the only consistent contact absentee forest owners have with professional forestry (26% of panhandle forest owners receiving Woodland Notes reside out-of-state or south of Idaho County).

Panhandle forest owners can choose from over 140 forestry Extension publications available through local UI Extension offices. Recent Extension videos on water quality, "selective" logging, and forest tax management, provide additional resources to help forest owners learn on their own. Panhandle Forest owners can also access archived Woodland Notes articles, a database of consulting foresters, links to relevant websites, and a variety of other useful information on the UI Extension Forestry Web site, maintained by Extension forestry staff on the UI Moscow campus.

Since 1993, the Extension Systems of the University of Idaho and **Washington** State University have cooperated to hold an annual forum for consulting foresters, state-employed service foresters, and other natural resource professionals working with NIPF owners. The program, titled the NIPF Foresters Workshop, updates participants on emerging technology and knowledge applicable to non-industrial private forestry. It alternates between northern Idaho and eastern Washington locations.

In response to requests from K-12 teachers, we also offer University of Idaho credit for applicable Extension programs, such as the Forestry Shortcourse. This allows teachers to obtain university credit for programs that help them integrate forest science into their classrooms.

b. 127 private forest landowners, UI County faculty, and green industry employees have an increased knowledge and understanding about specific insect and disease problems affecting their trees and woody shrubs.

74 Master Gardener Trainees and Advanced Master Gardeners have increased knowledge and understanding of how to make a diagnosis of a tree problem, and how to recommend and advise landowners and green industry employees on treatment of specific problems and care for their landscapes in general.

179,768 private forest landowners, UI County faculty, green industry owners and employees, and other general public and interested citizens have increased knowledge and understanding on forest management techniques, nursery management, and forest ecosystem dynamics and health. This information was delivered via newsletter, radio, telephone, fax, surface mail, e-mail, web site hits, publications, CD-ROM, HomeWise newspaper column, the Society of American Foresters Forestry Source, and 2 Idaho Farm Bureau Publication, The Gem State Producer and the Quarterly.

22 UI undergraduate and graduate students have increased knowledge and understanding of the diagnostic process and of common tree problems in urban and leisure settings.

Seventy-five people attended the three LEAP sessions held in the Idaho Panhandle in 02-03. On exit evaluations, 84-95% of the participants indicated they would implement improved management practices as a result of attending LEAP. In addition to LEAP, 79 loggers attended other Extension forestry programs, such as "Current Topics in Forest Health", "Scaling & Marketing Private Timber", the "Thinning and Pruning Field Day", and "Managing Organic Debris & Slash". In total, UI Extension provided 1,512 contact hours of

continuing education for panhandle loggers last year. Thus far, 582 loggers have signed up for the Idaho Pro-Logger program.

In FY 2003, 252 owners of more that 40,922 private forest acres attended Extension workshops and other educational activities in the Idaho panhandle. In most program evaluations, fewer than half of participants indicated previous involvement in various forestry education or assistance programs; on average, over 90% indicated they would implement improved management practices as a result. (see the "Idaho Forest Stewardship Educational Activities Report: 2002-2003" on the forest management topics team web site: http://extension.ag.uidaho.edu/planning/forest/plan_docs.htm). A follow-up survey of people who completed the forestry shortcourse over the last 10 years is planned to get data on practices implemented and other outcomes of that program.

333 natural resource professionals attended Idaho panhandle Extension forestry programs in 2003, for a total of 1,509 contact hours. In the NIPF Forester's Workshop, 98% of the participants indicated they would be able to work more effectively with NIPF owners as a result of the program. Five Idaho panhandle teachers took the forestry shortcourse for credit in 2002-2003.

Extension Natural Resources Forestry Professionals are now linked via the Western Extension Forestry Committee in the **Western Region**, and 9 states are participating in the first regional project, development of a module for the National Web-based Forestry Learning Center. Landowners and nurseries in the interior northwest are linked with others in more traditional hardwood growing regions through national presentations and workshop participation, and by visits from the leaders of the hardwood research and growers cooperative at Purdue.

c. UI Forestry Extension is supported by the Idaho Department of Lands, $30,000; USFS, $7,000; USDA RREA, $56,244, EPA, $22,200. Additional support is provided by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. Many of the educational programs are conducted in collaboration with Washington State University Extension, including LEAP, the NIPF Forester's workshop, and the annual forum for forest managers.

Key Theme – Integrated Pest Management

a. Extension serves Washington County as Director of the Orchard Pest Review Board that continued monitoring of Codling Moth infestations in apples during 2003 and encountered an outbreak of Apple Maggot. Extension organized informational meetings between the ISDA, County Commissioners, and landowners. An agreement was reached about Apple Maggot control options and procedures. A weather station was installed to inform orchard IPM programs for both Codling Moth and Apple Maggot heat units. The heat unit projections helped the Orchard Board advise the affected landowners on when to begin insecticide treatments. On behalf of the Orchard Board, Extension followed-up with affected landowners verifying use of insect control measures and monitoring the success of

controls and published information about codling moth and apple maggot issues in the Washington County Extension Newsletter.

Potato IPM Statewide surveys have shown that virtually all Idaho potato producers are using certain elements of integrated pest management (IPM) strategies, especially cultural controls, pest scouting and thresholds. Grower interest is high in biocontrol; more than 70 percent of Idaho potato growers surveyed responded that they wanted more biological control tools. Yet, conventional pesticides remain an integral part of potato pest control. An essentially zero-tolerance threshold for late blight and aphid-vectored viruses mandates fungicide and insecticide applications at regularly scheduled intervals. Weed control in potatoes likewise depends on pesticides; 98 percent of Idaho's commercial potato acreage receives at least 1 herbicide application annually while 25 percent receives 2 or 3 herbicide applications each season. The industry as well as the general public is concerned about pesticide residues and food safety, groundwater contamination by agricultural chemicals, and ever-increasing costs of crop protection chemicals and long-term economic sustainability. Loss of pesticides to FQPA will further constrain current potato IPM strategies. Hence, a long-term priority is to advance IPM to a more biointensive approach.

Surveys also suggest five ways that Extension can enhance IPM adoption:

- Clearly spell-out the short-term cost advantages of IPM and long-term benefits to human health and the environment; all are significant incentives that motivate growers to adopt IPM.
- Address grower concerns about the financial risks of not using pesticides; lack of confidence in IPM alternatives still limits adoption.
- Develop and deliver effective, easy-to-use IPM tools and decision aids; interest especially is high in biological controls and pest forecasting systems.
- Especially target industry field staff, private consultants, and chemical company representatives for IPM training; they are most frequently consulted by growers for pest control advice.
- Convene local field clinics to train growers and their families about IPM scouting methods; they do much of the field scouting.

Sugarbeet IPM. Rhizomania, the most serious disease of sugarbeets, continues to spread throughout the sugarbeet growing area of Idaho, eastern **Oregon** and the Columbia River Basin, and about 40% of the Idaho sugarbeet acreage is now estimated to be infested. Resistance is incomplete, and no sources of resistance have been identified to the new race of the causal virus in southern California's Imperial Valley. The eventual spread of the new race to Idaho in the future is likely.

Field projects in 2003 included testing field performance of both standard and Roundup Ready rhizomania resistant varieties, and the effect of green manure crops on rhizomania development. Results from the rhizomania variety test with 38 entries are being provided to the industry to help growers make decisions on variety choices. The transgenic variety test with both Roundup-Ready and rhizomania resistance had five entries.

The first year of a preliminary study was conducted in 2002 to test the possible effects of oilseed radish as a green manure on rhizomania, and continued in 2003. In the 2002 study

there was an increase in sugar yield of 12-18% for the green manure treatments but no differences in disease were measured. The 2003 studies were expanded to measure nutrient cycling, soil microbial changes, and changes in soil physical properties. Those data are currently being analyzed.

Rhizoctonia root and crown rot and powdery mildew continue to cause growers economic loss. In 2002 a field test to examine the effect of radish green manure on root and crown rot caused by *Rhizoctonia solani* was conducted at the Parma R&E Center and continued in 2003. No differences in the green manure treatments were measured because of lack of disease pressure in the test. Typically two years of inoculation are required with *Rhizoctonia solani* before adequate disease development can be expected. The second year of inoculation has been done and the test will be continued in 2004.

A fungicide test with 20 treatments for powdery mildew control was conducted at the Parma R&E Center. Results from a 2002 powdery mildew test showed up to a 4.9 ton/A benefit with timely treatment of the disease. Analysis of the 2003 studies is not yet completed.

In 2003, 15 weed control experiments were conducted in sugar beets. In response to continual problems controlling weeds in sugar beets, an in-field sprayer calibration survey was developed for spring 2003. A protocol was developed with a worksheet to simplify calibration calculations.

Pesticide Safety

Pesticide applicator training is provided for new applicator certification, professional applicator certification, and applicator recertification. The Pesticide Safety Education Program (PSEP) for new applicators in Idaho is a partnership of the Idaho State Department of Agriculture. Our shared mission is: *to help the citizens of Idaho learn how to use pesticides in the safest, most effective way while protecting human health and environmental quality.*

- We develop self-study materials and conduct training workshops that help pesticide applicators earn and maintain legally mandated pesticide licenses.
- We emphasize personal safety and environmental protection through the principles and practices of integrated pest management.

To help individuals prepare, learn, and pass the pesticide applicator license exam we have offered Agricultural Pesticide Applicator Training Workshops and Pesticide Applicator License Exam Preparation Classes.

b. The Washington County Orchard Board effort successfully curtailed the Codling Moth outbreak, such that no further incidents were reported last year. The landowners with whom we had an agreement all treated for Apple Maggot as requested. According to the ISDA trap results, apple maggot detections were negative or were extremely low on these properties. The trap results indicate the control measures taken by the landowners this year were effective in reducing Apple Maggot. ISDA trap results in other nearby public lands and private lands, however, did show Apple Maggot detections. These detections suggest that the Orchard Board and the ISDA will probably extend this control program to new areas in 2004.

The grasshopper control program made it possible to treat 50,000 acres for grasshoppers. The control result was 90-95% within 10 days. Because of the partnerships developed, the most important outcome was cooperation among state and federal agencies and land owners to collaborate to solve a mutual problem.

Potato IPM. In a survey of attendees at the annual 2003 University of Idaho Potato Conference, people attending several workshops were asked to rate (1 the least to 5 the most) their level of concern and need for educational programming for 18 issues relating to potato planting, managing diseases, weeds, insects and nematodes and harvest and storage management. Forty-nine percent of respondents rated managing potato viruses and managing hairy nightshade as a 4 or 5 in level of concern. Managing green peach aphid was rated 4 or 5 by 48 percent. Additionally, 48 percent of approximately 130 respondents rated the need for educational programs as 4 or 5 for each managing green peach aphid and managing hairy nightshade. Forty-six percent rated managing virus diseases as a 4 or 5 as a need for educational programs.

Information was transferred directly to more than 2,300 people via 27 presentations including seminars, workshops and field days. There were 25 newspaper and popular press articles published, 3 Extension publications, and 26 other various publications including book chapters, scientific journal articles, miscellaneous Extension publications, abstracts and proceedings, and research reports.

Accurate disease diagnoses are critical for evaluating disease management options. Extension provides science-based information that allows potato producers to reduce crop loss to diseases and make sound disease management decisions based on accurate disease diagnoses. The late blight scouting program was expanded to include more diseases and input from crop advisors. Information was obtained on the occurrence and severity of early blight, white mold, and black dot. Communications with independent and affiliated crop advisors, an Integrated Pest Management Advisory Board, and other customers strengthens the working relationship between the University and commercial potato producers, and allows data to be collected on larger production acreage. Dissemination of disease problems was improved through a fax service, a passive email service (email messages sent to growers), and a web page.

On-farm experiments were conducted in Parker (pink rot and powdery scab), Burley (effect of green manure crop on plant disease), Aberdeen (early blight, black dot, and white mold), and Minidoka (pink rot and powdery scab). These plots allow for small-plot research results to be applied to a farm-scale operation. Results of these studies are disseminated through presentations to grower organizations and through one-on-one contacts, the Idaho Potato Conference, and extension meetings.

Growers and industry representatives are responding to research projects including “Optimizing Insecticide Applications to Reduce Virus Transmission in the Field” and work with nightshades and the importance of controlling these weeds in the reduction of virus transmission. Forty-nine percent of approximately 130 responding growers rated managing potato viruses and managing hairy nightshade as a 4 or 5 in level of concern.

Spanish IPM Training Clinics. Stakeholder assessments revealed that IPM training was needed for farm laborers. Many laborers making critical decisions concerning pesticide use are Spanish speakers. Most of them have not been adequately trained in IPM. The extension educators developed PowerPoint lectures covering IPM concepts and organized workshops in Spanish for these farm laborers. In eight Spanish-language workshops, a total audience of 248 Spanish-speaking participants increased their knowledge in insect IPM. An evaluation instrument measured a fourfold increase in participant knowledge of potato pests and symptoms.

Through the workshops, Spanish-speaking farm laborers not only learned to identify insect pests but also gained a better understanding of IPM practices. At the Potato School, eighty-four percent of respondents indicated high satisfaction with the quality of teaching and presentation.

Sugarbeet IPM. Education of growers and chemical company representatives has resulted in better fungicide management for preventing fungicide resistance from developing in powdery mildew. Fungicide recommendations being made by consultants and chemical sales representatives now include improved timing of application and alternating fungicide types.

Pesticide Safety. New pesticide certification students attending the Agricultural Pesticide Applicators Training Workshops achieved a 70% rate in passing the certification exam. The pass rate for 2003 was much higher than previous training classes (pass rate for 2001 was 53%). The increase in the pass rate indicates that the training agenda is effective and that instructor proficiency has improved.

The pesticide applicator exam prep classes that were conducted were very successful. Of those who responded to a program evaluation, all of them passed their exams. Comments from the evaluations were very positive, and the survey indicated that the program was very helpful in preparing the individuals for their exam. There were many suggestions that this program be offered every year, and we are planning on delivering this program each year and in more locations in the district.

Recertification credits were awarded to 1,381 people attending various workshops, schools, and classes for that purpose enabling those individuals to continue their authorization to use and apply agricultural pesticides in ways that protect human and environmental health.

c. Thirty different grants totaling $258,748 were obtained from various funding agencies in support of these projects. Projects were completed in collaboration with councils, commissions, agricultural chemical dealers, state and federal agencies, professional associations, businesses and cooperatives, state and regional agricultural agencies, commodity and trade associations, and potato producers. Additional support is provided by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. The projects in this topic area are statewide. Some of the IPM projects are collaborative through the Western region partnership, and potato disease work is collaborative with scientists in Washington, Colorado, and other potato-growing states.

Key Theme – Nutrient Management

a. Animal Agriculture

Faculty and staff from the CALS Department of PSES, Agricultural Communications, and Information Technology Services have collaborated to develop on-line proficiency testing for re-certification credit that will preclude the need for much of the travel and associated costs. The collaboration involves the successful integration of different software and systems/programs associated with (1) website program introduction and listing of available proficiency tests, (2) registration in the Banner system and on-line payment of testing fees, (3) the WEBCT testing facility, and (4) electronic reporting of earned re-certification credits to the regional CCA (certified crop advisors) Office. This Extension program has excellent potential for better serving the re-certification needs of CCAs, and possibly other certified agricultural practitioners (certified pesticide applicators/consultants and certified nutrient management planners). It will provide immediate documentation on utilization of prepared educational materials and the re-certification credits earned.

A regional land grant approach to nutrient management education helps avoid duplication of efforts, increase credibility of land grant university nutrient management recommendations, increase the information resources available to address specific concerns, improve the quality of publications, and better use limited educational resources to serve regional clientele. A SARE grant, "Western Integrated Nutrient Management Education," is currently in place to facilitate this interaction among PNW Extension nutrient management professionals from Idaho, **Oregon**, and **Washington**. A new grant is being prepared to continue this collaboration.

Nineteen presentations, seven publications were given by members of this team for a total of 246 FTF contacts. Team members also received grants totaling $25,000.

During the past year, 10 producers have received assistance in the planning of facilities and waste management structures to facilitate the management of the nutrients produced by their dairy cattle, dairy heifers or beef cattle operations. In most cases, plans for new facilities were prepared to allow for accommodation of water purchased, herd expansion or remodel of facilities. These producers were involved in the planning and development of nutrient management plans that would meet the requirements of state and local laws, rules and ordinances. These plans have been reviewed and approved by the Idaho State Department of Agriculture.

The primary objective of the nutrient management planning committee was to provide education on developing, implementing and evaluating a nutrient management that will meet the local, state and federal regulations. To help accomplish the objective the following educational opportunities were provided:

- Establish a biannual nutrient management conference with knowledgeable speakers to share the latest knowledge and technology in nutrient management.

- The sub-committees met to determine the educational needs for nutrient management planners and producers.
- The sub-committees were tasked to determine sources of funding that might be used to support the work of the group
- The planning sub-committee determined there was a need for a nutrient management curriculum that could be used by extension educators and professionals to serve as a source of the latest information on nutrient management planning.
- The planning sub-committee worked to develop a set of training materials that would be used with producers to improve understanding of the entire nutrient management process.

Nutrient Management Plans include detailed directions for manure application on crop ground. The amount of manure to apply varies due to soil type, crop, crop yield, crop rotation, depth to ground water, subsurface soil characteristics, soil phosphorus levels, and phosphorus levels in manure. Learning how to apply manure at specific rates is a new challenge for Idaho dairy producers. University of Idaho faculty evaluated two methods for calibrating manure spreaders. Application rates were estimated with the tarp method and by the swath width and length method on fifteen loads of manure. Application rates were highly variable between farms, ranging from 14 tons per acre to 112 tons per acre. Drier loads of manure tended to be more uniformly applied than wetter, sloppy manure. Estimated manure application rates differed by 10 to 35% between calibration methods. Both methods can be used to achieve a "ball park" estimate of application rate. Exact calibration is impossible due to the natural variability in manure both within and between loads.

Phosphorus feeding and manure management practices were surveyed on 40 eastern Idaho dairy farms. Survey highlights include:

- Phosphorus feeding levels were typically in the 0.4 to 0.45% range (dry matter basis) for lactating cows, slightly higher than current NRC recommendations of 0.35 to 0.38%. Phosphorus feeding levels have not changed in the last two years on most survey herds.
- Most dairies supplemented phosphorus in their TMR's or computer feeders and did not provide additional phosphorus in an outside mineral feeder. Phosphorus intake was therefore well controlled and luxury consumption was minimized.
- Smaller dairies typically purchased a custom mix which included protein supplement, by-product commodity feeds, minerals, and buffer. Accuracy of mixing was therefore primarily driven by quality control at the feed mill rather than on the farm.
- Box spreaders with rear discharge are the most common spreaders in eastern Idaho.
- Many dairies have only short-term manure storage which means manure is land applied throughout the year. Others stockpile manure and do most of their land application after fall harvest. Nutrient compositions will vary dramatically under these conditions.
- None of the eastern Idaho producers surveyed practiced manure testing.
- Soil testing in the spring was commonly practiced on most operations.

There were 15 presentations and 8 publications (5 peer reviewed) from this project for a total of 203 FTF contacts.

Fertility Management

This project establishes background data on the soil nutrient supply rate and crop nutrient demands for adapting a nutrient forecasting model and the use of ion exchange resin membranes for use in the Magic Valley.

Plant Root Simulator® probes, ion exchange resins, and the PRS® Nutrient Forecaster model (Western Ag Innovations, Saskatoon, SK, Canada) were employed for this research. A nitrogen rate field trial was set up in Twin Falls County in silage corn. Soil samples were taken and analyzed in the fall and in the spring and were analyzed for primary, secondary, and micronutrients. These measurements provided an assessment of the soil nutrient supply characteristic. Training was provided throughout the state for USDA-NRCS personnel on the Idaho OnePlan nutrient management software.

The team had $135,989 in grants to do research on 10 specific projects. Members of the team gave 18 presentations, workshops and in-service training sessions for a total of 909 FTF contacts. The group completed one PNW (collaborative with **Washington** and **Oregon**) multi-state publication and 3 other publications.

b. Animal Agriculture

The online proficiency testing for re-certification will increase the utilization of Extension publications both in terms of those accessed electronically as well as those purchased from Agricultural Communications. The program will improve both the visibility and effectiveness of UI Research and Extension efforts throughout the state and region.

Mandated nutrient management plans for dairies and other confined feeding operations required software that enabled plans to be computer assisted, in order to meet deadlines. The nutrient application module was the least finished element of the Idaho One-Plan Nutrient Management Planner Program. Application recommendations involved integrating UI fertilizer guide recommendations for all crops grown. Served with ARS and NRCS development team to finish the integration of UI recommendations into the program.

Producers receiving assistance from the University of Idaho were involved in the planning and development of their facility plans and nutrient management plans which were prepared to meet the requirements of state and local laws, rules and ordinances. The producer involvement was intended to increase the producers understanding of the plan and as such to improve the implementation of the plans. An informed producer will be better equipped to implement the plan correctly.

c. Demonstration research on soil fertility was supported by ten different grants (state, federal, and private) totaling $135,989. A SARE grant for $25,000 supported the northwest multi-state nutrient management project. Additional support is provided by Smith-Lever 3(b&c),

from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. These projects are multi-state (with **Oregon** and **Washington**) and statewide in scope.

Key Theme – Range Management

a. The primary areas of emphasis were on public land grazing issues, rangeland monitoring and rangeland weed control (see invasive species). Numerous individual consultations and over 40 workshops were conducted, reaching nearly 1,500 individuals.

   Approximately 80 participants attended two riparian proper functioning condition workshops held at Salmon and Malad. An invited presentation on stewardship of western rangelands was made at a joint meeting of the western agriculture experiment station coordinating committees on range research and range economics in Reno. A manuscript of the presentation was completed for publication in 2004. Three invited presentations were made on rangeland monitoring in Bannock, Idaho and Bingham Counties.

   Numerous environmental impact analyses, land use plans and T & E species proposed listing documents were reviewed and critiqued. Extension personnel also participated in several range tours to discuss and assist in resolving rangeland issues. Personnel also participated in developing a rangeland drought management newsletter and assisted in getting counties suffering drought listed as disaster areas. Three peer reviewed and five non-peer reviewed articles on various aspects of rangelands were published in 2003.

b. Five extension bulletins/CIS's were published. Participants at the riparian workshops learned how streams function and how to assess the condition of the streams. Favorable responses were received from the more than 80 participants. Ranchers learned how to monitor rangelands and both ranchers and agency personnel gained a better appreciation of how rangelands can change, even in the absence of grazing. Permittees on two allotments were able to graze longer in the fall, due to the monitoring they learned to do.

c. Support is provided by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. Range projects are Statewide. Several workshops were conducted in partnership with Utah and Nevada.

Key Theme – Soil Conservation

a. In the fall of 2000 the Bureau of Land Management applied the herbicide Oust to public land that had burned the previous summer. Due to a dry winter, soil contaminated with Oust was blown onto neighboring fields raised for crops resulting in severe crop damage estimated at approximately $100 million dollars. In the spring of 2002 Extension faculty established a compost trial on farm ground suspected to be contaminated with the herbicide Oust. The purpose of the trial was to evaluate whether or not compost would minimize the impact of Oust on the crop by binding the herbicide. Compost rates of 3, 6, 9,

and 12-ton/acre were compared to an untreated check. Two sites were established one on potatoes and one on wheat in 2002. In 2003 both sites were planted to wheat.

Soil conservation-related outputs include 2 classes, 9 seminars, 2 in-service trainings for county faculty, 1 professional presentation, 8 posters and displays, and 1 field day, reaching an estimated 4,975 stakeholders. Publications include 4 scholarly abstracts, 2 research reports, 5 Extension publications and 1 popular article.

b. Potatoes and wheat were harvested from the Oust contaminated sites on varying dates in 2003. For the wheat/wheat site all compost treatments yielded higher than the untreated check with the exception of 12 ton/acre (this is perhaps due to a sampling error), yields increased with increasing rates of compost. Sub-samples of the hard red spring wheat were evaluated for test weight, moisture, and protein. As expected with decreasing yields, proteins increased. Data has been complied and has been shared with farmer-cooperators and local stakeholders.

c. Support is provided by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. The soil conservation program is statewide.

Key Theme – Soil Erosion

a. Direct seeding is addressed by research and technology transfer to growers and other clients. Several residue and direct seeding experiments have been conducted and are ongoing. The direct seeding comparisons in the tillage trial and the results from other trials create direct seeding management technology. That technology is transferred through this program and in concert with the Extension Conservation Tillage Systems program. Adoption of the technologies can reduce erosion, enhance soil properties, reduce environmental degradation and pollution, but also reduce production. Adoption of soil conservation practice, and in particular direct seeding, takes time, but many practices are in place and used more and more to protect the soil.

Educational events focused on direct seeding included 4 seminars, 6 workshops, 2 in-service programs for county faculty, 9 poster presentations and displays, and a field day. A total of 5,487 customers were reached through these programs. Direct seeding-related publications include 4 Abstracts & Proceedings, 2 Research/Project Reports, 6 Miscellaneous Extension Publications, and 1 Popular article.

b. Outcomes from this program have not been measured.

c. Much of the work on conservation tillage has been supported by the STEEP project. Support is provided by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. Idaho’s STEEP project is collaborative with Washington. Other projects are statewide.

Key Theme – Water Conservation

a. Most growers excessively irrigate sugarbeets. Periodically growers face inadequate water supplies. Over-irrigation leads to a) increased disease, b) excessive leaching and erosion, and c) lower yields. Growers are not taking advantage of current technology for soil moisture monitoring and irrigation scheduling.

   An irrigation project was developed in 2002 to demonstrate watermark soil moisture sensors and a Hansen data logger as tools for improved irrigation scheduling. Sugarbeet growers cooperated to install and operate soil moisture sensor systems in their fields. The project demonstrates the use of a soil moisture monitoring program in growers' fields to achieve proper irrigation based on known principles for reduction of soil erosion and nutrient leaching while improving sugarbeet production and quality.

   Fieldwork was completed in October 2003 and results are now being compiled and analyzed. The major education thrust will be made at the Snake River Sugarbeet Conference in Nampa in January 2004.

b. Water applications on the sugarbeet fields without water monitoring were 18% greater than on the monitored fields. Sugar percentage was equal between the plots. Yield was 0.9 tons per acre higher in the Control than in the Treatment. Differences in management from the first two years of the project show the grower's costs for the Treatment plot were approximately $94 per acre less than in the Control. Based on a reported 14,000 acres of sugarbeets in Canyon County widespread adoption of these practices could potentially reduce growers' production costs by $1.3 million annually locally and by about $17 million across the state of Idaho.

   The 2002 sugarbeet demonstration in Washington County was installed on a sprinkler-irrigated field and resulted in sugarbeet yields with water monitoring exceeding yields on non-monitored fields by 3-ton/acre. Sugar percentages were also approximately 0.5 % higher on the 'treatment' side. The 'treatment' side received approximately 5.5 inches less water than the 'control' side. Soil nitrate values at the beginning of the season and at the end of season were calculated for all soil sensor depths. Nitrate values at the end of the season were low at all samples depths, but especially at the deeper (three foot) sample depths. It appears the 2002 crop used nitrate resources relatively efficiently and that little nitrate was moved to the deeper three-foot depths.

   The short-term outcome of raising sugarbeet growers' awareness of the benefits of using proper irrigation scheduling and fertility practices is taking place. Through field demonstrations, presentations at various schools, publications and popular press, growers and crop consultants are learning about the usefulness of this technology.

c. This project has been supported by a UI Extension critical issues grant ($5,000), an Idaho State Department of Agriculture specialty crop grant ($10,000), and by cooperating farmers. Additional support is provided by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. This project is in southwestern Idaho.

Key Theme – Water Quality

a. Drinking Water

More than 90% of Idaho residents consider clean drinking water, clean rivers and clean groundwater to be high priority issues. In addition, two-thirds of state residents consider water for agriculture, water for power generation, water for economic development, loss of wetlands, prevention of salmon extinction and watershed restoration as high priorities. Idaho residents want information about these issues so that they can make informed policy decisions. More than 50% of survey respondents indicated a desire to attend education programs that address the above water issues. In addition the public wants water-related information from media such as the web, television, radio and newspapers.

The University of Idaho has developed numerous educational programs that address water related issues. Recent programs include NEMO (Non-point source Education for Municipal Officials), voluntary monitoring, Idaho OnePlan, and TMDL workshops.

The *Domestic Water Use: A Resource Guide for Extension* was developed by the **Pacific Northwest** Region water quality collaboration with resources provided by an Extension Water Quality Coordination 406 Grant. This resource will enable Extension offices across the Pacific Northwest region to effectively answer public inquiries about drinking water quality and water systems using state-of-the-art information. The Domestic Water Use Resource Guide contains over 70 current publications and will be housed in all county and regional Extension offices. The guide will be updated on a regular basis. The University of **Alaska** spearheaded the development of this product.

Land grant universities, state and local health departments, and state and federal agencies have provided the publications contained in the guide. Many of the publications are available on web sites. A complete list of web sites that were utilized to gather the information found in this guide is provided. The Domestic Water Use Resource Guide provides answers to drinking water questions, and in the production of media, press releases, teaching materials, and presentations.

Many Idaho teachers are not aware of the role that water plays in the Southern Idaho economy. The Idaho Water Education Foundation, including UI Extension, supports 2-3 camps in Idaho each year to enhance the understanding of K-12 teachers regarding the hydrologic cycle, the economic importance of irrigation, and the ways irrigators, dairymen, and aquaculture producers are using and protecting our water resources.

Nitrate Areas of Concern

Groundwater sampling in Canyon County indicates that nitrate nitrogen concentrations are currently within health standards, but are on the rise. Groundwater sampling in Washington County indicates that nitrate nitrogen concentrations are frequently above health standards and increasing. High nitrate levels in groundwater used for drinking cause several health problems, one of which is "blue baby" syndrome. Deep percolation of irrigation water and

nitrogen from cropland is recognized as a contributor to groundwater contamination. Onion production has been determined to have the highest nitrate nitrogen leaching potential. Approximately 9,000 acres of onion production occurs in the Treasure Valley of Idaho.

A $20,000 grant from the State of Idaho was used to demonstrate onion production practices that can reduce ground water contamination by nitrogen and increase water and fertilizer use efficiency while maintaining onion production. This project was established with farmer cooperators on commercially grown onion fields, utilizing furrow and drip irrigation systems and soil moisture monitoring equipment. Demonstration plots allow growers to observe the influence of furrow and drip irrigation methods and schedules on both nitrate movement and onion yield and quality.

In late July, an onion education program was held at the Parma Research and Extension Center. Part of the program included a field tour to the demonstration project site. The data has been presented in regional conferences, and has been summarized and disseminated to growers.

NEMO

NEMO is a GIS-based educational program developed to improve land use planning decisions by local officials and planners. This GIS-based system allows planners to visualize the impacts of current decisions on counties and/or cities 20 years into the future. This system has a strong emphasis on protecting water resources. EPA has funded a NEMO pilot project for Idaho's Magic Valley. The NEMO project has sister pilot projects in **Oregon** and **Washington**, through a formal arrangement among the State Extension Systems and the Regional EPA office.

GIS systems have been developed for the Magic Valley by the United States Geologic Survey for the Middle Snake River Resource Commission. The Middle Snake Resource Commission is a group of citizens, supported by six counties in the Magic Valley who work on water quality and quantity issues. Through the efforts of the commission the USGS was paid to do a ground water model of the nitrate vulnerability of the ground water in the six-county area. The commission has studied the issues in the area and has with the assistance of Twin Falls County Extension, developed a surface and ground water plan for the water resources located in the six-county area. One of the results of the work on the ground water vulnerability model and the development of the plan was the opportunity for the University of Idaho to become involved in an educational process for local planners and county officials in the use of GIS as a planning tool. GIS training sessions were held in each of the six counties in Magic Valley where the planning and zoning boards, zoning administrators and county commissioners were shown the plan and how GIS tools could be beneficial in local land use planning.

b. Drinking Water

Extension's work in the late 1990's with the Wood River Soil and Water Conservation District was instrumental in obtaining funds to update irrigation systems, with the goal of lowering the sediment and bacterial content of return flows into the Little Wood River. The project that was completed this summer measured the changes in return flow water quality that have resulted from the changes in irrigation systems since the early 1990's.

An irrigation workshop in January of 2003 helped producers in Bear Lake and Caribou counties better understand the importance of proper timing of irrigation. One-third of the producers from this workshop opted to install water sensors, which were provided through a grant obtained from the Idaho Department of Water Resources. The sensors installed at the producers' farms were used to determine the timing of irrigation. One producer left the January meeting and purchased his own water sensors to improve irrigation management.

In cooperation with sugarbeet, potato, and small grain growers, the ECEE conducted mineralization studies to determine the release and timing for profitable crop production and quality. Growers provided land, water, equipment, and time to facilitate trials. In 2003, the ECEE gave three field tours and two presentations for 260 participants including growers, fieldmen, DEQ scientists, industry and agency personnel.

Voluntary Monitoring Regional Workshop - Over 30 educators in **Alaska**, Idaho, **Oregon** and **Washington** participated in the first annual water quality monitoring workshop. Part of the motivation for the workshop was to enhance Extension's visibility as a provider of science-based education in the natural resources. The workshop was held July 14 and 15, 2003 at the Central Idaho 4-H Camp in the Sawtooth National Recreation Area, Idaho.

Nitrate Areas of Concern

Approximately 200 learners participated in Extension programs reported in this section. Preliminary results of the onion demonstration plots in Washington County showed fewer nitrates were lost from the drip-irrigated onions than from the conventional furrow-irrigated onions. The drip-irrigated field had less nitrate fertilizer applied than the furrow-irrigated field and very little moved beyond the crop root zone compared to furrow irrigation. The drip-irrigated onions also had the highest levels of root nitrate suggesting that nitrate was supplied more efficiently to these onions. Moisture monitors showed that drip-irrigated onions were kept at a more uniform, wetter soil moisture status than furrow-irrigated onions. As a measure of crop quality, onions from the drip-irrigated field were found to be larger in diameter than the furrow-irrigated field. Findings from the Washington County onion projects were reported in an Extension newsletter and in a presentation at the November 2003 Extension Regional Meeting.

As a technical advisor to the Washington County Ground Water Committee, UI Extension helped write and review implementation activities for reduction of nitrates in ground water. Techniques and data from the onion demonstration projects were included in this document. County Extension serves as a collaborator with the Weiser NRCD in several water quality demonstration projects for the area. Extension participation emphasizes the installation and use of soil moisture monitoring equipment for efficient irrigation and nitrate runoff reduction. Soil moisture sensors and monitors will be used in all 6 of the projects. Farmer cooperators have been selected and the projects will begin in spring 2004.

NEMO

The Middle Snake Resource Commission has teamed up with the University of Idaho Extension System to work on water quality and quantity issues and in the development of a surface and ground water plan for the water resources located in six Magic Valley counties.

Training sessions in each of the counties for planning and zoning boards, zoning administrators and county commissioners increased interest in water resource issues, which are facing the region.

Another result of the educational effort was a conference held for state and local decision makers in August of 2003 to elevate the awareness of the critical issues facing the region's water resources. The outcome of the conference has been increased dialog with state and local officials about the laws that are affecting water in the region. Other results have included additional meetings with State Department of Water Resource officials and local decision makers and legislators to discuss the need for legislation in the upcoming legislative session to address critical water issues. Extension educators working with NEMO have made a total of 262 personal contacts.

c. Support for these projects has been garnered from Washington County ($5,273), the Idaho State department of Agriculture ($20,000) and the Idaho department of Water Resources ($2,000). The Region 10 office of EPA supported the NEMO project and the PNW water guide publication. Additional support is provided by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. Idaho participates in the PNW multi-state water quality program, with Oregon, Washington, and Alaska; which was responsible for several of the projects reported in this section. Other activities are statewide and multi-county.

GOAL 5 – ENHANCED ECONOMIC OPPORTUNITY AND QUALITY OF LIFE FOR AMERICANS.

Overview

a. Outputs: During 2003, 87 individual faculty and staff (about half are 4-H coordinatorsor 4-H assistants) reported extension activities in programs focusing on goal 5. These personnel contributed to the delivery of 195 faculty presentations, workshops, field days, or other educational events. One hundred-sixty eight publications were reported for this goal including popular articles to scientific articles, and fact sheets to book chapters. In total, participating faculty estimate the total number of contacts with stakeholders at 5,441 (not including 4-H).

b. Outcomes: Through Extension education, families learned to better manage their fiscal resources, to improve their interpersonal relationships, to plan their economic futures after retirement, and to plan transfer of their property before death. A particular emphasis has been placed on older youth, limited income families, and seniors to learn about financial management. New and expecting parents have learned parenting skills from Extension, how to better teach their children, and how to be successful as a single parent.

Members of communities have learned to consider the assets in their communities from the

perspective of youth development, and to develop thoughtful community action plans, marketing plans, and community resources. Businesses have learned to better respond to customer needs and desires, and to develop comprehensive business plans. Individuals considering new business ventures have similarly learned to evaluate the likelihood of success through development of business plans and market analyses. Local government officials are more knowledgeable about the importance of health care to rural economies, and transportation authorities have learned new tools to evaluate the impacts of projects on nearby real property values.

Young people have learned new life skills and job skills, through both traditional and non-traditional 4-H activities that reach into Idaho classrooms. They have learned to work in teams, to work with adults, to take on leadership roles, and to contribute to community improvement.

c. Impacts: Education has informed and motivated learners to change money management behaviors, including spending choices, use of credit, budgeting, and tracking expenses. Adoption of new behaviors results in improved personal and family financial situations—especially valuable for low-income audiences. Seniors have drafted new wills and other legal instruments that will facilitate better outcomes for themselves and their heirs. Parents with improved knowledge of child development and behavior have increased interaction with young children, including activities known to improve literacy. Parents of older children have learned to apply new communication skills, documented to reduce the incidence of high-risk behaviors in teenagers. Education has increased the level of marriage satisfaction by 1/3 for participating couples and, long-term, will result in fewer divorces, better adjusted children, and reduced costs to families and society.

   Extension programs and assistance have made possible new community facilities, prompted new businesses and created new jobs. Companies with new business plans are better managed, entire communities are more attractive to visitors because of new customer service behaviors adopted by businesses, and those businesses have experienced increased profit following Extension-delivered training.

   The quality of Idaho's workforce has been improved through technology training and improved job skills and life skills learned by our young people. Young farmers have successfully grown crops under contract with mentoring corporations and have received top prices for livestock they have grown to meet market specifications. More than 100 struggling Idaho farm families have applied new skills to the workplace and now receive an average $10,250 annual increase in employment-based income.

   More than 30,000 Idaho youth are less likely to partake in high-risk activities because they have participated in 4-H. A statistically significant number of these young people make better grades in school and will refrain from joining in illegal activities. The number of productive youth participating in community affairs continues to increase in Idaho.

d. Since developing our 2000-2004 plan of work, University of Idaho Extension has become more focused to address the goals related to enhanced economic opportunity and quality of

life. Our plan of work describes outputs (numbers of contacts, classes, publications, etc.) that have all been exceeded, despite a significantly reduced workforce. These outputs are documented in more targeted program areas than originally planned.

Our efforts to document success, however, have shifted to measuring outcomes that result because of our programs. In this regard, we are experiencing success to a degree not envisioned in 1999. Because of changing customer needs and faculty resources, some programs, such as community development and parent education, have received greater attention since the development of our plan of work; while other topics, such as workforce development and youth at risk, have become better integrated across the spectrum of Extension programming.

e. The **total** investment in Extension programs that address the economic opportunities and quality of life goal is approximately $7,688,700. This includes $1,962,650 in total grant activity[3]; {including $398,621 from CSREES and $1,010,000 from other federal agencies. The private sector invested $168,250 in grants for economic development and quality of life; and various para-government agencies (commissions) invested $137,650. Grants originating from State and local government represent a $231,874 investment.} Appropriations from **Smith-Lever (3) b&c** total approximately $869,624. **State** appropriations for agricultural research and extension total approximately $2,840,700. **County** governments invested $2,015,700 in Extension programs in support of this goal

Key Theme – Children, Youth, and Families at Risk

a. 4-H Impact Study in Idaho
To demonstrate the benefits of the 4-H program on youth development, University of Idaho Extension conducted a survey of students in the 5th, 7th, and 9th grades. Sixteen randomly selected counties participated in the research project, and within each county four schools were also randomly selected for the study.

b. Of the 3,601 respondents from 53 schools, 577 students had been 4-H members for two or more years. The study found that youth in 4-H were more likely to get A's and to hold leadership positions in their schools and communities; that youth in any youth group are less likely to indulge in risky behavior than youth who are not active in organized youth groups, but 4-H youth are the most likely not to smoke, drink, drink and drive, steal, damage property or use drugs.

c. Support for this project is provided by a UI Extension critical issues grant, and by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. CYFERnet is a national project in which UI participates. Other aspects of this program are statewide.

[3] Some amounts reported through this system include investment for multiple years, and are not specific to this reporting year. For specific expenditures, records are maintained with the one-audit protocols.

Key Theme – Community Development

a. The Coeur d'Alene EIRP Director worked with a North Idaho College law enforcement class on understanding Native Americans and how police should handle cultural differences. He also developed and presented a leadership workshop to initiate discussion among the various service providers on the reservation. A Jerome County Educator conducted a mentor-training program for 115 mentors.

   A Benewah County Extension Educator conducted Internet & basic computer training for local residents. County Extension worked with a local volunteer center to reward volunteers for their efforts at the first annual Volunteer Recognition Night for outstanding volunteer service in Latah County.

   County Extension worked with the Lewis Clark Coalition for Family and Youth and Lewiston and Clarkston high school youth boards to plan and conduct a Northwest Regional Summit on Youth; and in Nez Perce County, Idaho and Asotin County, **Washington** to develop and conduct three Leadership Enhancement and Development workshops.

   Idaho Extension collaborated on a regional project to plan and deliver the Western Community Vitality Workshop for Extension Faculty. Idaho Extension directed the Clearwater RC&D Area Plan Revision Process. Inputs included –
   - Conducted 70 interviews in a five state area.
   - Completed report for public review.
   - Compiled feedback on the report.

   Idaho Extension served as a reviewer in the Idaho Department of Commerce Community Review process for Emmett, Idaho to:
   - Facilitate, with Department of Commerce and Idaho Association of Cities staff, 3 strategic planning sessions for economic development organizations in Emmett.
   - Provide summary of process and additional guidance in 10 page final report.

   A State Specialist developed professional development training on "Developing an Effective Message for Marketing Your Organization – 10 Points in 60 Seconds" delivered at the Idaho Weed Conference (Winter 2003), the Extension Food and Nutrition Program in-service training (Winter 2003), and with the U of I Extension Advisory Board (Fall 2003).

   A State Specialist completed a "Farmers as Filmmakers Project," funded by the Western Rural Development Center. Results were presented at the Rural Sociology Society – American Agricultural Economics Association joint meetings in Montreal (July). Idaho Extension also assisted the Moscow Grange with planning a "Revitalizing the Grange Through the Arts" program.

   A funded project was completed, and a report was submitted to the Office of Rural Health of the Idaho Department of Health and Welfare on the economic impacts of health care on each of Idaho's counties.

   A funded project was completed for the Idaho Transportation Department (ITD) on how

appraisers can "best" estimate losses to property values associated with roads being built or widened in proximity to the property. A guidebook was developed for appraisers, and 25 ITD appraisers were trained in its use. A project report has been submitted to ITD. A follow-up project has been funded by ITD.

b. Participants at the **Northwest** Regional Summit on Youth indicated an 80% gain in knowledge of developmental assets, a 30% gain in knowledge of the Lewis-Clark Coalition for Families and Youth, a 100% gain in knowledge of America's Promise to Youth, a 40% gain in knowledge of how to get involved in their community, and a 50% gain in knowledge of resources available in their community. When asked to list the most important piece of information they had received from the summit, respondents most often cited “hearing the perspective of area youth on a variety of issues.”

   Several state and county faculty planned and conducted an Economic Summit for North-central Idaho and southeastern **Washington**. This effort resulted in a regional collaboration, providing planning assistance for leadership and community capacity-building. The consensus priorities developed at the Economic Summit will go forward to the statewide rural summit in November. This effort has created opportunities for Extension to partner with a range of organizations on community development programs.

   Benefits of the Clearwater RC&D Area Plan Revision Process include greater regional awareness of community, economic and natural resource project needs so that service providers such as the RC&D (and Extension, among others) can better match efforts to community needs. Publications will focus on the outcomes and benefits of this in-depth planning approach. As a result of Extension’s role in the Emmett Community Review process, city and county government in Gem County are working more closely together, as are a number of community and economic development organizations.

   As a result of the Farmers as Filmmakers pilot video project participants recognize the need for more informal opportunities for farmers to interact on a sub-regional basis. A series of farmer gatherings / pasture walks will be organized (and filmed) beginning Fall, 2003. The *Revitalizing the Grange Through the Arts* project represents an effort to reconnect contemporary rural communities to their agricultural roots.

   The Director of Rural Health Programs (Idaho Dept. of Health and Welfare), stated that rural county commissioners in Idaho have an improved understanding of the importance of health care services in their counties due to dissemination of the results of our work on economic impacts of health services. They are using the results of our study as they make decisions on funding for many of the health services in rural counties.

   The Leaders of the Right-of-Way Division in the Idaho Transportation Department, and the appraisers with whom they work, have expressed much optimism that the results of our study of how to "best" estimate losses to property values associated with nearby roads being built or widened will result in substantial savings of tax dollars to pay for damages when settlements or court rulings occur. The study is just out, so it is too early to see examples of how study results affect decisions.

c. Funds received from State critical issues grants, Idaho Department of Health and Welfare, and Idaho Transportation Department total $101,000. Additional support is provided by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. The North Idaho-Eastern **Washington** Summit was conducted in partnership with that state. Several regional projects, including the Community Vitality Initiative (collaboration throughout the west and with the **Western** Rural Development Center), are regional in scope. Other activities in this area are statewide.

Key Theme – Family Resource Management

a. Basic Financial Management Education

Families earning limited income and having a difficult time making ends meet have a new way to learn about financial management. Extension developed an updated curriculum, and a learning video and curriculum guide. *Gaining Financial Fitness* was delivered in cooperation with the Boise City-Ada County Housing Authority (BCACHA), to a non-traditional low-income audience of single parents or persons facing difficult life situations.

The class "*Finances: Freedom or Fiasco?*" has been delivered as a component of several family relationships programs, and also as a one hour program on PBS television in Pocatello, Idaho. The broadcast aired 9 times during the month of April and again 4 times in fall. The viewing audience is approximately 16,000.

Seven *Dollar Decision$* products were designed and produced in FY 03; the authors are marketing the video, curriculum guide and two Extension publications through Idaho educator in-service trainings, national meeting presentations, professional association newsletters, UI Ag Communications web site and word of mouth. Spanish language translations were completed for two publications "*Tracking Expenses*" and "*Making a Spending and Savings Plan*" in collaboration with Extension in Español.

An array of programs to teach money management have been delivered by UI Extension, including: *Save for Your Future, Gaining Financial Fitness*, *Saving for Retirement*, *All My Money, PowerPay, Making Spending Choices or Planning Your Spending Which Comes First?, Using Credit Wisely, The Good, the Bad and the Benefits of Getting Out of Debt."*

Idaho Financial Literacy Coalition members teamed up to develop a new financial management program *Top Ten Financial "Need to Knows" for Couples and Everyone* based on a program initiated by New Jersey Extension. The goals of the program were to help participants learn how to reduce debt, increase savings and investments, develop an organized record keeping system and reduce stress in their lives by practicing positive financial behaviors. Five four-hour workshops were held in fiscal 2003.

Financial Security Later in Life

To implement this initiative in Idaho, faculty have received, developed, and delivered training and have formed partnerships with AARP Idaho, Mercy Medical Center of Nampa, Area Agency on Aging, Caldwell Public Library, Albertson's College of Idaho, the Internal

Revenue Service, Preferred Retirement Options, Treasure Valley Comprehensive Referral Center, and Western Idaho Community Partnerships. One-hundred eighty persons in later life attended the four-hour workshop on September 27, 2003. An evaluation meeting with the Canyon/Owyhee Financial Literacy Coalition will be held in December. Eighty-five participants completed evaluations.

"Who Gets Grandma's Yellow Pie Plate?" Transferring Non-titled Assets was presented in two workshops in Grangeville and Lewiston. Distribution of possessions is a common problem for many older people, and can be very damaging to family relationships when not well planned. Participants learned the how to get started and/or manage the process of transferring non-titled assets to those whom they wish to receive them.

Extension faculty facilitated the *Legal Check-Up* program in multiple counties, in collaboration with the University of Idaho Law School and with AARP's legal services personnel. Participants registered for the program in advance and received a workbook to review before the program so they were prepared to learn what would benefit them most.

The Extension Educators in Idaho and Nez Perce Counties, Idaho and Asotin County, **Washington** facilitated a *Long-Term Care Workshop*. Cooperative Extension partnered with AARP Idaho and Washington to underwrite the cost of the program so it could be offered free of charge. Speakers from the Area Agency on Aging, Idaho Legal Aid, Idaho Department of Insurance, and Qualis Health presented information about local resources available, getting help with medical costs, pros/cons of purchasing long term care insurance, and how to find quality nursing home care.

b. Basic Financial Management

Participants completed a post-evaluation to determine what they learned, what they planned to do personally following the training, and if they planned on sharing this information with others. One goal was for those who attended to share the information with others. Seventy percent (70%) planned on teaching the budgeting lesson, 74% the credit lesson, and 70% the debt lesson.

The *Making Spending Choices* and *Planning Your Spending* post-evaluations indicated that 53% strongly agreed that they became aware of what can influence their spending choices. Most participants indicated that they had gained significant knowledge about: a) the importance of a spending plan (67%); b) about tracking expenses 58%; and, c) using an envelope budgeting system (56%). Most participants (62%) responded that they strongly agreed that they would future track their expenses and nearly as many agreed to begin within the month. When asked if they would develop a spending plan and use it, 94% agreed or strongly agreed. Eighty-eight percent of attendees indicated they planned to share budgeting information with others. At the time of the workshop, 70% of participating individuals speculated they would share this information with an average of 17 additional individuals from their different organizations.

The *Using Credit Wisely* post-evaluations indicated 100% of participants learned new and useful information about the types of credit available to consumers. When asked about

checking their credit history regularly, 96% agreed that it was important. Sixty-seven percent strongly agreed they gained knowledge about how credit cards are different from other forms of credit and 63% strongly agreed they learned about the warning signs of using credit unwisely. When participants were asked what they would do following the class, 85% planned to request a copy of credit report, 100% agreed to review the "terms and conditions" of any credit cards they currently use, and 55% were highly motivated to determine how much credit debt they currently have. When ask if they plan on sharing this information, 52% planned on sharing with their family, 22% with extended family and 74% planned on sharing with their group/organization reaching approximately 13 additional individuals per participant.

The *Getting Out of Debt* post-evaluations indicated that 74% strongly agreed they became aware of when borrowing makes sense and what is good debt. This was compared to 71% who strongly agreed they had gained knowledge about bad debt and the signs of debt problems. Ninety-one percent of the participants agreed they had gained knowledge about how to evaluate their debt and determine if there is a problem. When asked about the knowledge gained about strategies for controlling debts, 94% agreed that significant learning had taken place. Fifty-five percent of the attendees strongly agreed they would evaluate current debt loads following the training. Ninety-one percent indicated they would make greater efforts to pay off debts.

Participants in the IFLC series indicated that they all planned to improve communication about money and financial attitudes, using at least one idea from the workshop, and all participants described at least one recommended practice that they would adopt to improve their financial well being.

Financial Security Later in Life

Early outcomes from FSLL programs have been evaluated through participant surveys, questionnaires, and pre-post test instruments. In all cases, participants report improved knowledge of issues, resources, and behavior options related to decisions about protecting financial resources, transferring estates, and long-term health care. More than 400 attended these workshops in 2003, and many are on waiting lists to participate in 2004.

Two hundred forty six persons attended seven seminars held in Boise, Nampa and Caldwell. An end of seminar participant evaluation revealed that 98% increased knowledge of how to strengthen their legal health and 80% anticipated taking legal action as a result of the *Legal Checkup*. Eighty-seven percent reported that they would share this information with others. As a result of the *Legal Checkup*, 95% of participants felt they benefited emotionally (peace of mind) and/or financially from the program. Following the program, participants stated they would take the following actions:

- 70% Draft/revise will and/or trust.
- 64% Draft/revise power-of- attorney and/or health care power-of-attorney.
- 58% Draft/revise living will.

A three-month follow-up survey found participants continuing to review insurance policies, and draft or revise their wills and durable powers-of-attorney. Participants reflected back on the program and shared these comments:

- "It was a wake-up call. I'm now collecting all the information in one place and will update it."
- "I've organized my affairs to make things easier to follow!"
- "It was a good review for us and prompted us to go through our documents."
- "This is a very informative program for family members, especially senior citizens."

c. Support in the amount of $16,000 was invested in internal grants from UI Extension and $4,300 was contributed by Idaho Department of Finance. A total of $28,250 in private grants and donations were received from AARP, Idaho Power, several hospitals, and other sources, contributing to the development of the basic financial management project. Additional support is provided by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. Family finance programs are statewide.

Key Theme – Parenting

a. Parents as Teachers

Thirteen Idaho counties host University of Idaho Extension *Parents as Teachers* programs, with extension management over advisory committees, personnel, parent educator training, and collection of evaluation data. After 3 years, the University of Idaho *Parents as Teachers* Demonstration Project is serving more than 300 families with more than 450 children. Program participation is entirely voluntary and is free to the families. Trained parent educators conduct personal visits with the families and hold parent group meetings once a month. One bilingual educator serves Spanish-speaking families. AmeriCorps volunteers assist several programs. This year we have begun serving in-home child care providers with a special PAT program for this audience.

In addition to the direct service to families and children, PAT parent educators and supervisors have given presentations at the local, state and national level about core concepts of early child development, literacy development in the early years, community and family roles in early development, and public policy on early development and readiness for school. Total reported face-to-face contacts: 3,249. Total reported educational events: 112.

Grandparents as Parents

We have worked with the University of **Illinois** to revise a set of handouts for grandparents raising grandchildren for use in Idaho. This year will be important for marketing those handouts to relevant organizations and agencies in Idaho. In addition, Extension educators in some counties have been working with the Idaho Office on Aging to develop support groups for grandparents raising their grandchildren. In the past year UI Extension has made presentations on grandparents raising grandchildren at local regional and national conferences. Total reported FTF contacts: 139. Total reported events: 5.

Marriage

In 2003 *Married and Loving It!* was taught in several Idaho counties. A partnership with

Head Start has helped link the program to a lower income and Hispanic audience, thus demonstrating the transferability of the program success to new groups. Total reported personal contacts: 227. Total reported events: 12.

Basic Parenting and Parenting Apart

County educators have offered parenting workshops including *Parenting 101*; *1,2,3,4 Parents!*; *Active Parenting of Teens*; and *Parenting Apart*. Participants included parents of children birth to 17 years of age, single parents, married couples, stepparents and parents in transitional housing. Some are referred by the court system to participate in Extension parenting programs, others are just interested in improving their parenting skills. Extension continued to partner with North Idaho Migrant Head Start to provide parenting classes at Elk Mountain Farm. Six sessions of *Padres Activos Ahora* (Active Parenting) were held for migrant parents at Elk Mountain Farms. Extension worked with the local Latino community to translate the parenting handouts and activities into Spanish. Total reported personal contacts: 106. Total reported events: 11.

b. Parents as Teachers

Since its inception, evaluation was at the core of the *Parents as Teachers* Demonstration Project. In the first stage of the evaluation we showed that the program was effective in increasing parents' knowledge of child development, their abilities to meet their children's daily needs, and their confidence in their parenting skills. Parents also report that they read more to their children, do more activities with them, and are better connected with other families with children.

This year we finished the second stage of evaluation, in which we assessed the fit of *Parents as Teachers* to Idaho communities. The results of this survey demonstrate that *PAT* brings a unique resource to Idaho communities, and that families of young children have few alternative ways to learn the information we bring. We have made presentations on these results at local and national meetings.

We recently completed a content analysis of the *PAT Birth to 3* curriculum to evaluate the concepts and strategies presented to parents about emergent literacy. Research shows that the foundations of literacy are laid in the first years of life as children interact with their parents. Our analysis showed the *PAT* curriculum to be replete with core concepts of early literacy as well as strategies for parents to use with their children. Results of this analysis were presented to the annual conference of the Parents as Teachers National Center, and through a nationally distributed press release on Parents as Teachers and literacy.

We are planning next steps in evaluation, including measuring parents' understanding of what it means for children to be ready for school, and what roles they can take to support their children's learning in school. In addition, we will assess the extent to which PAT children move successfully into the school environment.

Basic Parenting and Parenting Apart

Parents' evaluations showed positive changes as a result of the workshop series. Participants in *Active Parenting of Teens* completed a retrospective survey at the end of the 12 hour series and reported increases in all measured areas including:

- 87% increased confidence of how to communicate positively with their teenager
- 62% indicated an increase in their confidence as a parent
- 87 % increased their understanding of how to include teens in active problem solving

Qualitative data indicated parents' satisfaction the classes. Comments include: "I now have some new tools to try with my boys." "We now have more information and better ways to think about how to better parent and parent differently." "I met parents that had the same concerns I had with dealing with teenagers." "I feel the book and teacher was very informative. I feel really good about the classes. I feel good about the time spent." "I have practiced and will continue to exercise the skills I've learned."

Parenting 101 participants also completed a retrospective survey upon completion of the 12 hours of parenting classes. Parents reported increases in all measured areas including:

- 40% increase in knowledge of how their child is growing and developing
- 32% increase in knowledge of typical child behavior
- 27% increase in confidence in their ability to respond to their child's needs
- 43% increase in their ability to respond effectively when their child was upset
- 39% increase in their ability to develop and use logical consequences for their children's behavior.

Qualitative data indicated parents' satisfaction with the classes. Comments include: "I enjoyed the class very much -- no more spanking -- I have new ways of dealing with problem behavior." "It made me realize that I wasn't such a horrible mother and problems we have are just 'cause they are kids. It has really given me more confidence." "Now I know how to be a good father to my son as well as best friend, teacher and discipliner." "I can use this new information on my grandchildren."

Marriage

The *Married and Loving It* program has grown in visibility since it was introduced three years ago. This year, a "*Married and Loving It!*" web site was launched, and has received hits from all over the nation and from foreign countries. The curriculum has been distributed to 28 states, China, and Australia. UI Ag Communications has sold all of their copies from the second printing and is in the process updating for the next printing. One purchaser of the curriculum, Rabbi Frank Buchweitz, has used the material in his marriage education program for the Jewish Orthodox Union. The Rabbi comments, "Married and Loving It! provides outstanding practical suggestions, guidelines, and examples for strengthening a loving and committed marriage. One of the most user-friendly marriage programs written in clear, concise terms."

With the support of Critical Issues funds and the Social Sciences Research Unit, follow-up data was collected from past participants in the *Married and Loving It!* program. When asked to rate their marital satisfaction before taking *Married and Loving It!*, 63% indicated they were satisfied or very satisfied. The response rate since taking *Married and Loving It!* was 85%. Of those participants responding, 75% had taken *Married and Loving It!* one to three years prior to the survey.

Married and Loving It! continues to be recognized on the national level. Our program was

selected to represent the Extension system, at the Smart Marriages Conference in Reno, Nevada. *Married and Loving It!* was one of three programs highlighted. A recent article on *Married and Loving It*! was published in the Family focus section on marriage, in *Report*, the quarterly publication of the National Council on Family. The *Married and Loving It!* creator, along with team members, was recognized by the National Extension Association of Family and Consumer Sciences with the Western Region and National Florence Hall Award for Excellence in Extension Programming and has been selected to serve as Idaho's representative to the national extension office for marriage education. Health and Human Services has selected her to serve on a committee of 12 extension professionals to develop a national curriculum on marriage education. The University of Idaho publication, *UI Extension Education Trends 2002-03* highlighted the accomplishments of *Married and Loving It!*

c. *Parents As Teachers* received a total $2,739,388 from the Idaho Department of Health and Welfare during 1999-2005. Grant support was also received from Parents as Teachers National Center, $5,000. The Idaho Commission on Aging awarded $1,450 in grant funds to the grand parenting program. UI Extension awarded Critical Issues funds in the amount of $1,200. Additional support is provided by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. Idaho collaborated with **Illinois** on the grand parenting project. All of these projects are statewide.

Key Theme – Promoting Business

a. Idaho's county extension faculty provided expertise to a local group working on local beautification and economic development, a county community service building planning committee, and the fair board. Extension participated to plan, fund and develop an RV park and associated facilities; a non-profit development corporation to facilitate discussions about farm land conversion to subdivisions as county economic development increases; delivered a variety of extension courses and workshops on entrepreneurship, focused business marketing, internet education classes, and developing business plans.

   County extension was instrumental in developing detailed plans for a volunteer management center to screen and train local citizens to work with service organizations, serve on committees, run for public office, etc. Extension delivered customer service training to county businesses and organizations.

   Extension collaborated on a project funded by the geothermal group in the Idaho Department of Water Resources to study economic feasibilities and potential economic impacts of several potential energy based business developments in Idaho. Idaho Extension worked with the Rural Community College Alliance, to teach their membership "How to Work With Rural Communities, Businesses and Entrepreneur-Managers to Facilitate Rural Economic Development" sponsored by the Southern Rural Development Center and the North-Central Economic Development Center.

   Extension helped SAGE Community Resources (10-county economic development district

for Southwest Idaho) to revise their area plan and supervised a graduate student to compile community plans and assessments from the district, and created a database application for organizing and using the information gathered. The data analysis served as the baseline for a two-day strategic planning session with the SAGE board of directors. Extension delivered the final report and draft strategic plan to SAGE.

Several extension faculty collaborated to create and deliver a regional economic summit for North-central Idaho and southeastern **Washington**. Others organized Spring and Fall Community Development Team Learning Tours.

b. Phase 1 of the Power County Community Service Building Project was completed on July 30, 2003. Phase 1 included construction of a RV Park, dump station, sewage lift station and the addition of restrooms, showers and an office to an existing fairgrounds building. The Power County Fair, a MIA/POW Motorcycle Rodeo, a church dance, a family reunion and a wedding reception have been held in the building since completion of Phase 1.

People who received entrepreneur training better understand the importance of feasibility analysis, business plans and marketing requirements before they invest. Many program participants are moving forward to establish or expand businesses, while about half as many participants made informed decisions not to pursue business ideas at this time due to lack of planning and previously unperceived risks.

Post-course evaluations and six-month follow-up evaluations are given to participants in entrepreneurship and in business marketing programs. The evaluations rate the overall quality and relevancy of the course as well as participants' success with business start-up and business performance over time. Participant evaluations validate the importance of the training, and, in one county, documented one full-time job created for every eight individuals and one part-time job created for each four individuals who returned the six-month follow-up survey after completing a fall 2002 educational program.

Results of participants surveyed following business marketing workshops indicated that a majority of the businesses (88%) came into the training without a business plan and without any market analysis. Participants indicate a desire to conduct such planning and analysis, a step toward increased income and profits.

A survey of participants in customer service training workshops (conducted six weeks after the workshops) indicated that nearly all participants adopted recommended practices, amounting to significant behavioral changes. One-third of the business owners reporting back indicated improved income and profit after implementing those changes.

Investors are planning construction of a geothermal electricity plant (30-50 MW) in Cassia County. It will result in 26 jobs and $1.4 million in earnings. Extension economic analysis has contributed to this business decision, and will continue to be consulted as policy decisions related to the plant are considered. Lava Hot Springs decision makers are consulting the analysis performed by Extension as they consider further geothermal development in their community. If carried out, their plans will result in 3 new jobs and $48,000 in increased income (significant for the small town; population: 521).

The planning assistance provided to SAGE enhanced capacity to provide economic development services to constituent counties and communities. In addition, other economic development districts and the Economic Development Association are adopting this process as a model of strategic planning for economic development.

c. Support is provided by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension.

d. Business development programs are statewide.

Key Theme – Workforce Preparation - Youth and Adult

a. The Owyhee County program provides workforce preparation through technology to youth grades K-12. Technology education strives to engage Hispanic youth in and around the rural community of Marsing, Idaho. Youth gain leadership skills and are encouraged to mentor others by teaching them technology skills. Trained youth are encouraged to share their technology skills by giving presentations, presenting workshops, and becoming involved in projects in their community. The desired outcome of the workforce preparation is for the youth to acquire skills that would improve their value as a volunteer to business organizations and community members, and ultimately will encourage them to set career goals and improve their employability. Parents and youth surveyed about these programs indicated improved personal development, knowledge and skill. The parents also commented on the high quality of the leaders and the fun their children experienced during the learning process.

   The Canyon County CYFAR *New Communities Project* (*NCP*) has three components, a month-long 4-H summer day camp, an art and technology camp for children of farm and agricultural laborers, and two after school technology programs for teenagers. The *Notus Summer Day Camp* prepares teenagers and younger children with work-related skills in the areas of technology, nutrition, theater and visual arts. The art and technology camp focuses on fusing hands-on art with computer art, emphasizing both content and life skills. The technology programs prepare youth for future learning and employment through project based technology activities. The overall project goal is to reach Hispanic youth and other at-risk youth in grades K-12.

   In Latah County, the White Pine & Troy School District 21st Century Community Learning Center – 4-H Partnership is viewed as a huge success. Adults and youth alike gained knowledge, self worth, and valuable life skills. The collaboration will continue its work in the White Pine and Troy After School programs through the 2003 - 2004 school year.

   The Caribou County 4-H program set goals to increase the number of school enrichment and day camp projects this year. There were 400 school enrichment projects this year and 168 day camp projects. Last year there were only 25 school enrichment projects and 80 day camp projects. This is a 15-fold increase in school enrichment and 110% increase in day camp projects. Livestock Day camps were well represented, as many parents no longer have the necessary background to teach their children basic livestock management.

Since 1997, 3,443 youth and adults have participated in 4-H Livestock Day Camps. In 2003, 699 youth participated in the camps. Extension Educators in the bordering states of **Wyoming** and **Utah** became involved in 2000. The Idaho team trained these educators and presented camps with them for two years. The Wyoming educator trained other Wyoming educators, and they continue to present livestock camps in their state. 4-H volunteers use the ideas, knowledge, and information gained at the camps to teach youth at club meetings, organize and present stations at livestock play-days, and staff stations at the day camp. Youth use the information to present 4-H demonstrations, help younger youth learn project information and older youth staff stations at day camps. Livestock and horse day camps are demonstrated to increase the knowledge base of youth and volunteers in those projects. Survey results indicate that more than 60% of the participants learned how to recognize a sick animal, learned proper ethical practices, and learned to identify livestock equipment and uses. Nearly 75% said they learned more about breeds and learned proper quality assurance practices.

The Natural Resources Workshop at the Central Idaho 4-H Camp at Ketchum teaches youth about the important natural resources in Idaho. The objective is to provide an intensive learning environment for these youth, where they will learn about their surroundings in an unbiased manner. Extension collaborates with the U.S. Fish & Wildlife Service and Idaho Fish & Game in the preparation of wildlife management field and classroom curricula.

Other successful Natural Resource Workshops in the state include: the Upper Clearwater Farm and Forest Fair (a 2-day event involving 410 fifth graders, parents, and teachers; the Clearwater County Sixth Grade Forestry Tour, a three-day event involving 80 youth participants. Wildlife Day Camps in four eastern Idaho counties were staged for 80-youth, in collaboration with Idaho Fish and Game; and a second year Wildlife Day Camp was held where 40 youth assisted with electro-fishing and cataloging the fish, tracking game with radio telemetry, and using GPS units to help map their habitat evaluation exercises.

<u>Alternative Careers for Idaho Farmers</u>

The *Alternative Careers for Idaho Farmers (ACIF)* is a federally funded pilot program, managed through the University of Idaho Extension in cooperation with federal, state and local agencies, designed to increase the employment, earnings, retention of families in rural Idaho communities, or occupational skill attainment of incumbent and dislocated farmer/rancher participants who receive services.

The goal of this project is to provide viable alternatives to self-employed farmers/ranchers who can no longer subsist on farm income so that they may either:

- Make their farms/ranches more competitive and thus retain the level of employment through the farm enterprise that assures self-sufficiency; [4]or,
- Develop an additional or supplemental income source while remaining on the farm;[5] or,

[4] Here "farmers" are treated as incumbent workers who need training in order for their farms, as business enterprises, to be viable businesses.

[5] Here "farmers" may be treated as either or both: incumbent workers in need of training and dislocated workers in need of training

- Enter a new career that will make the individual farmer self-sufficient.[6]

More than 461 eligible individuals have obtained application materials and have started the process of initial interviews with ACIF program coordinators since the program's inception in November 2001 (two years).

In FY 2003, this transitional support and training program assisted 140+ farmers/ranchers and their families who are unable to generate a reasonable income through their farming activities, and farmers/ranchers who are improving existing operations as a result of training specific to the needs of their business.

ACIF funds are used to support education and training at post-secondary institutions approved by the State Board of Education, as well as certain programs administered by service providers approved by the State of Idaho Department of Labor. In addition, ACIF provides reimbursement to participants for costs of transportation, childcare, medical needs and other support services when costs are reasonable and necessary for participation in the training activities. The program also may pay a portion of costs for student internships, apprenticeships, and "On-the-Job" training that provide participants part-time or full-time work opportunities related to their field of study.

b. Extension Educators have worked with 4-H youth, parents and leaders to help them increase their skill in selecting and feeding animals to meet these market standards. Since 1975 records in southern and southeastern Idaho indicate that there has been a significant increase in quality of animals sold at the youth market stock sales. Steers have gone from 27% grading choice to 65% grading choice. Beef steers have increased the rate of gain from 2 lb. per day to 2.8 lb. per day. Swine have increased their rate of gain by 0.5 lb. per day. Lambs are all within the industry standard if they make minimum weight. Much of this improvement is attributed to the increased knowledge that the volunteer leaders possess through the education they have received.

   In 2003, a study was conducted to determine the impact of the Idaho 4-H Livestock and Horse Judging programs on past participants' development of beneficial life skills associated with career preparation. Results of the survey showed the judging program to be highly influential in the development of animal industry knowledge with at mean score of 4.22. The judging program was influential on the development of life skills associated with workforce preparedness including: communication, decision-making, problem solving, self-discipline, self-motivation, teamwork and organization.

   A unique crops program in Twin Falls County was a success again this year. This 4-H Malt Barley project is offered to 7 high school-aged members each year. These members enter into a legal contract with Coors Brewing Co. to produce malt barley. The members are taught the many different facets of crop production including finances and book keeping, soil management, irrigation, weed control, etc. The Extension Educator provided technical assistance to the club and to the leader.

[6] Here "farmers" are treated as dislocated workers who have lost their jobs because the farming enterprise failed and need training to be reemployed in an alternative career.

Youth gain an appreciation of wildlife management issues and how complicated and interrelated they can become. Their awareness of these issues was especially evident in the Land Use Planning Competition. To further measure learning, tests were given to youth upon arrival and shortly before completion. This year, 46 students took the 50-question test. The average pre-test score was 49% and the average post-test score was 79%. The improvement in test scores indicates that instructors were effective, youth found the subjects interesting, and youth understood the principles and issues involved.

County Extension Educators received a personal letter from a 4-H family. The mother reported that her daughter graduated 1st out of 170 youth in her class, and commented that the 4-H program played a role in the participant's preparation for college. "Not only do they learn discipline, social behavior, and communication skills, they also learn to continue shaping themselves into more successful people."

More than 2,000 youth from nine Idaho counties have been learning life skills through a program called *Welcome to the Real World*. The course teaches high school youth about the realities of budgeting, to improve their future lives. Students are assigned representative occupations and commensurate incomes. Based on income, they must develop a real life budget that includes taxes, savings, rent, car expenses, insurance, utilities and groceries, and then must work with what's left to buy clothes, entertainment, and cover unplanned expenses. After this experience many dedicate themselves to further education and higher paying careers.

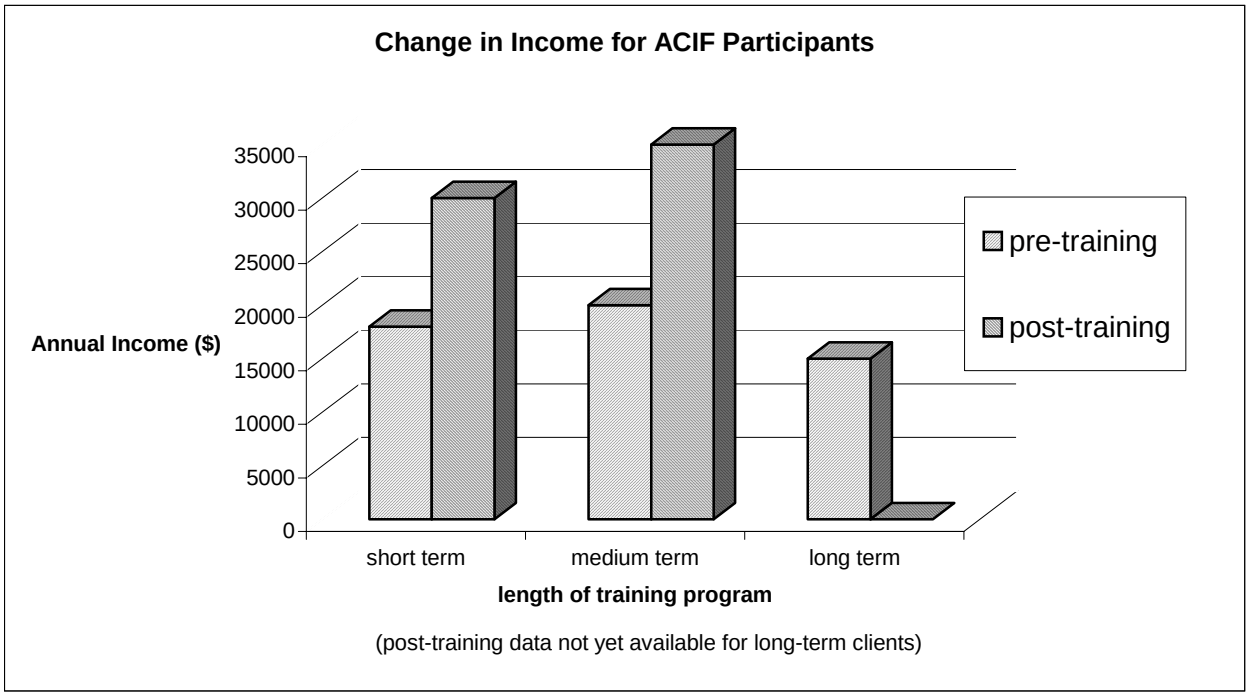
<u>Alternative Careers for Idaho Farmers</u>

- Of the persons receiving financial support for training and education, 80 percent completed their selected course(s) of study;
- Of the dislocated participants completing a course of study, 80 percent obtained employment in the field in which they were trained within six months;
- Of the incumbent participants completing a course of study, 80 percent supplemented their farm income with improved operations or an additional on-farm enterprise.

Preliminary analyses of clients who have completed their training indicate an average $10,250 increase in income from short- and medium-term training programs, contributing a total annual increase of $430,000 of wage-earner dollars within one year or less since the beginning of training.

Using this figure as a conservative indicator of the economic benefit of ACIF, and adjusting for some long-term training expectations, the ANNUAL increase in family income is estimated to be between 96% and 108% of the total LIFETIME investment in a client's career development program. In addition to individual family benefits, the value to society and to the community resulting from increased family income is expressed through increased tax receipts, reduced costs of bankruptcies, increased local purchases and other multiplier benefits, and reduced potential public costs of health care for the indigent. A conservative estimate of secondary public benefits from ACIF is at least 33% of those benefits accruing to the family. The combined ANNUAL return to families and communities

of the ACIF program will likely exceed the TOTAL cost of the investment by 30%.



c. The youth technology programs are supported by private funds in Owyhee County, and elsewhere by Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension. The ACIF program is supported by a $1.4 million earmark appropriation (FY2001) from the U.S. Congress, through the U.S. Department of Labor – Education and Training Administration/Dislocated Worker Program (DWP), and has been twice renewed. The program operates on a budget of $700,000 – $900,000 per year

d. These projects are Statewide in scope, with collaboration on your livestock projects with Utah and Wyoming.

Key Theme – Youth Development/4-H

a. Community Partnerships

The 4-H Endowment Board is made up of representatives from business, other youth organizations, 4-H volunteers, and paid staff. The Idaho 4-H Endowment is conducting a campaign to raise an additional $2 million. A campaign cabinet was formed, made up of 4-H Endowment Board members and past donors of 4-H. As of October 2003, more than $1 million has been pledged towards the campaign. The campaign will continue through 2004.

Technology

The State 4-H staff has been converting all 4-H record books and administrative support materials into an electronic format retrievable from the 4-H Website. The State 4-H newsletter *Focus* is now available on the web and in printed form. Also available are many administrative, training and support materials. Leader and member certificates, materials for club organization, fair judging and contest materials, application and report materials,

volunteer publications and record books/involvement reports are all available on the 4-H web site. Web accessible 4-H curricula are immediately accessible to the user and transfers the printing cost to the beneficiary.

The *Power Up* lab in the Marsing Resource Center represents a collaboration of more than 21 partners. In addition to the Power Up lab, high speed Internet connectivity is provided by a grant from the Advanced Internet Satellite Extension Project and will provide support for connectivity and equipment for 3 years. Funds from the grant have purchased ten GPS units and palm pilots. The units were used to teach a basic workshop on GPS/Palm technology to 4-H tech team youth, volunteers and collaborators, with a focus to integrate GIS/GPS into the current 4-H program.

School Age Programs

Extension delivers training and project materials to enhance learning in local schools. School enrichment numbers continue to climb and more curricula are being supported. Last year 23,687 youth participated in 4-H school enrichment programs in nearly every county. Projects include Idaho History, Embryology, Entomology, Gardening, Financial Management, Career Selection, Technology, Foods, Art, and Child Development.

Participation in after-school programs has also increased. UI Extension has provided training for communities to improve after-school programs and has taken a team of county faculty and staff to national trainings in this area. Several counties are now applying for funds to support after school programs. Extension/4-H is participating in after-school programs in Ada, Boundary, Canyon, Gooding, Idaho, Latah, Owyhee, Payette, Washington, and Valley counties.

Some of the innovative programs throughout the state include:

- The Meridian school district used *Computer Mysteries* to supplement their computer curriculum for the elementary schools.
- Teachers in the 6th grade middle school exploratory in Family and Consumer Sciences use an Extension child development curriculum.
- Special Education teachers used *Wild Over Work* to teach life skills.
- The Embryology project, *Hatching*, was used by second grade teachers to enrich the science curriculum.
- School counselors use *Talking with T.J*. in-group mediation sessions.
- *Palette of Fun* has been used in both after-school programs and day camps.
- Volunteers from the Ada County Sheriff's Youth Foundation used *Tricks for Treats* in elementary schools.

Junior Master Gardener

The Idaho *Junior Master Gardener* program is in its second year in six counties, using fun activities to teach horticulture and environmental sciences to youth of all ages. 4-H leaders, schoolteachers, and volunteers have been trained on the basic program materials. *Junior Master Gardener* Partners include Master Gardeners in those counties, Boys and Girls Clubs in Garden City, Boise and Payette County school districts, Star and Middleton Libraries, Girl Scouts of Silver Sage Council, University of Idaho Plant Sciences, Idaho

Botanical Gardens and other 4-H programs in these counties. When this growing season is over, Idaho JMG will have impacted over 2,400 individual youth across Idaho, many of them through repeated activities. This project is in collaboration with **Texas** A&M Extension, who is overseeing evaluation.

The Idaho JMG Team was invited to be part of the JASON program in 2003. Nine Idaho *JMG* team members presented 22 classes to 464 youth. Idaho *JMG* team members organized and facilitated a weed education program in conjunction with the Ada County Weed Department and held a weed skillathon for 86 youth and adults. In Washington County where minority youth have been difficult to attract to 4-H, 18 Hispanic youth were involved in the *JMG* Wildlife curriculum.

Ada County 4-H completed the *JMG* adult certification program this spring. County 4-H supported and organized *JMG* Golden Ray day camps in 2002 and 2003 for more than 160 youth and adults, infused *JMG* into after school and in-school programs, and delivered a five-week activity program for low-income youth at Ridgeway Elementary School.

Leadership Development

Youth learn leadership by observing and listening to others and practicing leadership behaviors. *Step Up To Leadership* is a CCS curriculum for which Idaho was the lead state for the Design team. The curriculum targets a variety of youth settings such as project clubs, after school programs, youth councils, youth camps and conferences. Training has been given to Idaho 4-H program managers who will train local leaders beginning in 2004.

Teen Clubs were active in a number of counties. The focus is on leadership skill development, service learning, career skills, public speaking, planning and organizing meetings and events, and teamwork. Youth have taken an active part in planning 4-H events and activities throughout Idaho.

A committee of 15 youth and five adults work in partnership to plan and implement Teen Conference each year. The planning and conference activities give teens real-life opportunities to develop social, and emotional, and practical life skills. Idaho Teen Conference participants held a joint service-learning project with **Washington** State University Teen Conference participants. Two hundred thirty-one youth, twenty-four adults, and twelve college staff participated in Idaho Teen Conference.

Know Your Government program is another leadership opportunity for Idaho youth. Participants learn the judicial and legislative processes, participate in a mock trial, debate bills, and vote on them. There are 22 youth on the planning committee, developing a program for 160 youth participants to learn leadership and team building skills. Youth plan and coordinate all of the events and activities. At the 2003 KYG Conference, 6 former KYG Teen Planning Committee members and Teen Association Officers helped as speakers, workshop coordinators, and adults' advisors. A former Teen Association Officer, who helped with the reporter workshop, has now joined the KYG Planning Committee. The KYG Conference is for 8th and 9th grade students and serves as a motivator for attending more 4-H events for teens such as Ambassador Training, Teen Conference, Citizenship Washington Focus, National 4-H Conference and National 4-H Congress.

Idaho received a grant from National 4-H Council and Land o' Lakes to conduct a youth in governance program. A state planning team was formed, made up of youth and adults from 4 counties. This team planned the training held in each of the 4 participating counties. In one county seventeen people participating in the program included a county commissioner, a high school teacher, elementary school teachers, day care providers, youth development professionals, scout leaders, church leaders, youth in leadership positions, 4-H Camp counselors, and high school and junior high school students. At the conclusions of the training, all participants indicated that they were more likely to team up as youth adult partners than they were before the training.

Teen 4-H camp counselors received training to improve their skills in youth leadership, including lessons about dealing with difficult situations, basic first aid, how to lead activities, learning styles and skill levels of different ages of youth. Counselors are given an opportunity to assist in planning 4-H camping programs and to assist in leading activities such as campfires, flag ceremonies, skit development, classroom activities and serving as group and cabin leaders. Being a camp counselor builds self-esteem and provides positive models for the younger 4-Hers.

In Ada County, more than 20 4-H members, parents, and leaders participated in HC*HY teen groups and service learning events. The Ada County 4-H team began an awareness program for the Ada county 4-H community using the 40 developmental assets in the Clover Post Newsletter and in other 4-H training programs during the year. Extension Faculty helped HC*HY team members restructure and reorganize their program and supported several events. New partnerships have been formed or strengthened with Girl Scouts, Big Brothers and Big Sisters (BBBS), in after school programs, the Ada County Sheriffs Foundation, Lights on After School, and area school districts because of HC*HY.

b. 4-H Impact Study in Idaho

Supporters have long been convinced that 4-H is a proven program, but data to support that contention has not existed. University of Idaho Extension conducted a random statewide survey of students in the 5th, 7th, and 9th grades. The study found that 4-H youth were more likely to get A's and to hold leadership positions in their schools and communities. Results also indicated that youth in any youth group are less likely than youth who are not active in organized youth groups to indulge in risky behavior, but 4-H youth are the most likely not to smoke, drink, drink and drive, steal, damage property or use drugs. The results were shared with Educators, 4-H leaders and teens at the State Leader's Forum in November and are being shared with decision-makers statewide.

Leadership Development

Evaluation of the youth governance program indicates that participants gained increased understanding of the value of youth to civic governance and decision-making; increased awareness of successful youth/adult partnership models; and an increased awareness of resources and tools needed to more effectively involve youth in community partnerships.

An evaluation questionnaire for the cabin leaders at the Natural Resources asked

questions about 15 specific leadership traits. Results show a statistically significant increase in the probability that the cabin leaders will use these 15 skills. The results for first-year cabin leaders from 2003 were combined with the results of 2002 in order to view developing trends in the various leadership skills. Those traits that youth indicated they would use the most after two years of results are "assessing personal leadership style", "group problem solving and decision making", and "group dynamics."

As an outcome of the UI Boise Center Outreach Committee, HC*HY recruited participants and promoted the Summer Seminar on Youth Development sponsored by the Outreach Committee of the UI Boise Center and Southwest Idaho in June. HC*HY made several referrals of clientele and programs to Ada County 4-H for youth development education, research, and service. This partnership has strengthened education and youth advocacy in the Ada county youth development community.

c. Support for these projects was derived from Smith-Lever 3(b&c), from State appropriations for agricultural research and extension, and from county appropriations for cooperative extension. Additional support comes from the National 4-H Council, and other private sources ($5,000), and from UI Extension critical issues funds ($5,000).

d. All programs are statewide, and the 4-H Conference was conducted in collaboration with **Washington**.

B. Stakeholder Input Process

The University of Idaho Cooperative Extension System conducted a statewide process to gather stakeholder input in 1999, immediately prior to the development of the current plan of work. That process invited and involved Idahoans from across all counties and interests to help determine the priorities of Cooperative Extension. Findings from that effort were used to identify specific customer needs and program expectations and were built into the plan of work as priorities.

In the period since that statewide effort, stakeholder input has been solicited and gathered in a variety of ways. Our state level advisory process has been modified to help focus input. Each academic department in the College of Agricultural and Life Sciences has formed discipline-based advisory councils, and receives input at least annually. In addition, Extension has formed, assembled, and led a statewide advisory council through a process to provide regular input on issues and needs, and on programs and delivery. These new or re-formatted consulting groups add to the input collected at the County level, through their numerous and representative advisory groups.

At the local level, educators in every county maintain a variety of advisory councils including 4-H leaders' associations and expansion (diversity) committees, agricultural producer committees, community development committees and FCS advisory committees. These groups are assembled and provide input about programs, needs, and priorities at least annually.

UI Extension collects input from stakeholders through ongoing program contacts with interest groups, commodity and industry representatives, other organized groups, and service and agency providers. Extension faculty participate in a large number of interest-based organizations, frequently holding elected or *ad hoc* leadership positions. At many organizational meetings, Extension (and research) faculty learn about stakeholder needs and priorities through participation on program planning committees or, more informally, through participation in the meetings and conferences. Faculty often schedule specific meetings with members of organizations to discuss existing and future programs and needs that interface the industry and the university. Faculty attend priority-setting meetings with commodity commissions, professional organizations, and industry or producer groups. Extension faculty work with Federal and State agencies to share information about problems, programs, and priorities.

Formal needs assessments are conducted with interest groups and stakeholders, as well. For example, in a survey of attendees at the annual 2003 University of Idaho Potato Conference, people attending several workshops were asked to rate their level of concern and need for educational programming for 18 issues relating to potato planting, managing diseases, weeds, insects and nematodes and harvest and storage management. Forty-nine percent of approximately 130 responding rated both managing potato viruses and managing hairy nightshade as high-level concerns. Managing green peach aphid was rated high by 48 percent. Forty-six percent rated managing virus diseases as a priority need for educational programs. Educational programs delivered by the Potato Team were modified to target the priorities specifically identified by those respondents.

In another example, an assessment was conducted by each of our extension districts to

determine what topics our clientele believe are most important in the area of health and nutrition. The first priority was to learn how to plan meals and menus. Committee members conducted a search for curricula that would meet this need. However, none could be found that contained all the topics requested by stakeholders, and faculty elected to develop a new curriculum. The curriculum "*Meal Time in Less Time*" was developed, published and translated into Spanish. This year, the subject matter was included as part of many different Extension programs, and was specifically delivered in numerous targeted workshops.

Stakeholder input is incorporated throughout the development of Extension programs; from problem identification through evaluation. Extension program and planning teams gather and summarize input from stakeholders that is used to determine program priorities.

C. Program Review Process

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

UI Extension has adopted a "Topic Team" approach to program planning and delivery. Teams of faculty meet to discuss priorities, and agree upon which of those projects should be advanced. Topic Team procedures are monitored by College administration. Topic Teams prepare and submit competitive grant applications for state critical issues funding. Successful applications are those that demonstrate that the project meets a team-identified, peer-reviewed priority, and will result in measurable outcomes for stakeholders.

D. Evaluation of the Success of Multi and Joint Activities

University of Idaho Extension is involved in multi-state and integrated activities as an integral part of our five-year plan of work. Individual faculty have described and reported their involvement in multi-state projects as part of their annual reporting process. The cumulative total of investment in multi-state programming and multistate project titles are reported for 2003 (see section E).

All extension faculty report their activities in relation to twenty-two Topic Teams that form the framework for our planning and reporting process. Most Topic Teams are populated by faculty from both research and extension missions, and topic team projects are intended to be fully integrated. To estimate our investment in integrated programs, however, we limit our calculations to the Smith-Lever portion of extension funding expended for faculty with joint appointments with both University of Idaho Extension and the Idaho Agricultural Experiment Station. Our Topic Team priorities were originally identified and characterized following a statewide effort to generate stakeholder input, and are reviewed during annual Topic Team

planning meetings. The cumulative total of investment planned in multi-state programming is reported for 2003.

Idaho Extension realizes significant benefits from involvement in integrated and multi-state activities. A principal benefit is that faculty and staff develop new ideas, skills, and interests through collaborations, as they share, learn, and co-develop new applications, new models, and methods with colleagues across mission areas and States. New curricula, new concepts in teaching and learning, and new ideas about how to address stakeholder needs are cornerstone benefits from collaborative efforts.

Did the planned programs address the critical issues of strategic importance, including those addressed by stakeholders?

Our efforts during 2003 have directed Idaho Extension resources toward issues of importance to stakeholders. Among the many programs described in "section A. Planned Programs" (above), multi-state examples can be found to address most of the 18 critical issues identified during the statewide stakeholder input process conducted to inform the development of our plan of work. Many of our multi-state and joint activities produce annual output consistent with the objectives of the project. For example, the annual cow-calf symposium results in a predictable, annual product; and many of our research and extension trials with neighboring States result in annual gains in knowledge. However, it would be premature to proclaim that our programs have achieved their goals. Many of our intended goals and outcomes have long-term implications.

Did the planned programs address the needs of under-served and under-represented populations of the state?

Primary under-served populations in Idaho have been identified as Latinos (doubled over the last ten years, to more than 7% of the population), American Indians (1%) and economically disadvantaged persons. Programs that addressed the needs of under-served audiences were both planned and not planned. Among those planned efforts with the greatest influence on under-served residents are EFNEP, ENP (Extension Nutrition Program), EIRP (Extension Indian Reservation Program), and 4-H. Over the past two years UI Extension has increased efforts to reach Spanish-speaking farm workers through a number of vehicles, including four Spanish-language milking schools and eight Spanish-language pest management clinics, and many individual Spanish-language classes taught as a part of other commodity school programs. Our contacts with Latino audiences in 2003 were approximately 8.9% of all face-to-face contacts. Each of these programs directs significant resources to meet identified needs of under-served.

Notable accomplishments in 4-H include an increase in Latino 4-Hers from 1,737 (2001) to 4,145 (2002), and to 4,725 in 2003; a change from 8% to 11% of our total 4-H enrollment. Our total minority enrollment in 2003 is 5,980, or 14% of the total youth enrollment. This level of minority participation represents a formidable accomplishment in a State whose minority population is less than 9% of the population total. One project that contributed significantly to this increase is the 4-H technology partnership in Canyon and Owyhee counties. UI Extension also continued to grow membership in the new EFNEP/4-H clubs, and started some new clubs for non-traditional audiences, including the Gem County Youth Services Day School.

Much of our outreach targeting Native Americans is conducted through our two EIRP programs. Participation in Extension programs for the Shoshone-Bannock tribe has increased. Further, Extension has begun to deliver more of our regional (multi-county) programs in partnership with the Shoshone-Bannock program (such as the Shoshone-Bannock range school), bringing traditional audiences to visit the people and programs on the Fort Hall Indian Reservation. Our newest EIRP program on the Coeur d' Alene reservation has made significant progress. Extension has worked with the Tribal government in areas of youth development, community development, and natural resources. Extension is responding to an increasing number of specific requests from the leadership and membership of the Coeur d' Alene tribe, and also the Nez Perce tribe.

Agricultural programs continued to extend their reach to Latino audiences. In 2001, two Spanish-language programs were delivered at Potato School. In 2002, Spanish-language presentations at potato school increased to 13, and four Spanish milking schools were delivered. Spanish-language presentations were also introduced at milking school (at four different locations), and at Sugarbeet School. All of these programs continued in 2003, with targeted increases where needed. In 2002, Food safety classes were offered in Spanish for the first time in Idaho. In 2003, these continued, and related outreach to Spanish-speaking clients continued to increase through the EFNEP and ENP programs. Parenting programs continued to reach Spanish-speaking audiences this year, through the Parents as Teachers program in Power County. Our "Grandparents as Teachers" curriculum has been translated into Spanish in 2003. Our newest Spanish language efforts include several family financial management tools, translated in collaboration with *Extension en Español* (Texas A&M). Another important under-served audience includes small-scale farmers. Multi-state efforts with Washington and Oregon continue to reach larger numbers of this audience in both northern Idaho and in the Treasure Valley, with a variety of targeted programs including alternative farming and pest alert networks.

Did the planned programs describe the expected outcomes and impacts?

Idaho Extension continues to learn, understand, and implement outcome-based programming. Our 2003 programs were much better aligned with this philosophy and methodology than in any previous year. A review of our annual report of accomplishments will reveal some valuable information about program outcomes for many of our planned programs. However, we are still learning, and in transition, and there is variable quality in the measurement and description of our diverse programs. As UI Extension more fully adopts outcome-based programs, we will develop new approaches to accountability and implement new measurement of meaningful indicators. In most cases, multi-state activities describe outputs of collaboration rather than intended outcomes. Examples of such planned multi-state outputs include workshops, publications, conferences, databases and curricula.

Did the planned programs result in improved program effectiveness or efficiency?

UI Extension lost approximately 20% of its professional workforce during the 2002 reporting year. Our Topic Team process, only in its second year, allowed our faculty to deliver quality programs and to produce outcomes exceeding those measured in previous years. Our faculty

have also relied more heavily on external collaborations than in the past. We have increased our participation on multi-state projects as well as with in-state partners. These collaborative efforts helped Idaho CES achieve efficiency and effectiveness, especially in the development of educational products. Multi-state collaborations allow diverse faculty to combine skills, talents and resources to develop tools useful to each collaborator and their in-state colleagues. A notable multi-state collaboration to deliver education about weight management brings expertise and materials into Idaho that would not be available otherwise. These collaborations greatly increase the number of programs offered through UI Extension, and reduce per learner costs to a fraction of what any state could accomplish on its own. Our involvement with the PNW publications effort enables Idaho, Washington and Oregon to develop regional products that meet the needs of multiple states, eliminating inefficiencies associated with duplication and reducing the per unit cost of production.

E. Multi-State Extension Activities

Appendix C

U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the Annual Report of Accomplishments and Results
Multistate Extension Activities and Integrated Activities
(Attach Brief Summaries)
Institution____University of Idaho_____
State_____Idaho_____
Check one: __X_ Multistate Extension Activities
____ Integrated Activities (Hatch Act Funds)
____ Integrated Activities (Smith-Lever Act Funds)

	Actual Expenditures				
Title of Planned Program/Activity	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Goal 1; Competitive agriculture		$249,977	$367,968	$ 257,013	
Goal 2; Safe Food		11,355	74,837	26,228	
Goal 3; Health & Nutrition		11,355	79,972	29,794	
Goal 4; Natural Resources & Environ		104,370	127,270	194,853	
Goal 5; Econ Oppor & Quality of Life		166,443	137,226	169,858	
Other multi-state investment		197,500	99,224	82,139	
Total reported by faculty		$741,130	$886,497	$ 759,885	
Total actually expensed in budget		$695,289	$780,274	$ 709,380	

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Director

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Date

MultiState Projects reported By University of Idaho Faculty

Scope of Project	Title of Project
International	Leader Development & Training
	Pest Management (Potatoes)
	Beef Cattle Nutrition
	Whitebark Birch Provenance
	German Marshall Fellows
National	Reproductive Efficiency
	Budgeting, Tracking Spending, Record-Keeping
	Dollar Decisions
	Blueberry Transformation
	NPL training for State Extension
	Galaxy II – ESP
	ANREP
	Aquaculture-water quality standards
	EFNEP & ENP
	Pesticide impact assessment
	CYFERnet
PNW (OR, WA, ID)	IM/ pests & beneficial insects in alfalfa seed
	IM/ pests & beneficial insects in Hops
	General small fruits
	Professional forestry shortcourse
	Web-based CCA
	PNW publications collaboration
	Small farm – direct marketing
	PNW range shortcourse
	STEEP
AK, OR, WA	Water quality consortium
	NEMO, TMDLs
	Regional R&E water quality conference
OR	Treasure Valley Pest Alert Network
	Extension crop pathology
	Extension horticulture
	Irrigation efficiency management
	Youth activities camp
UT	Master Gardener Training
	Strengthen Families and Communities
	Dietary Guidelines
	Leadership Enhancement
	Diabetes education
	Livestock day camp
Western Region	Huckleberry Domestication
	Forages--WCC091
	Grazing Academy
	Pest Management (Potatoes)
	Potato Production and Storage
	Small Acreage Landowners
	Potato IPM
	Beef cattle breeding & genetics
	Cow-Calf symposium
	Research Crop pathology
	Western Regional Aquaculture Center
	Western Rural Development Center
	WRPLC
	Potato seed quality & disease
	Western Pest Management Center
	Conservation tillage systems
	Nutrient & waste -- Web based CCA credit

Scope of Project	Title of Project
WA	Regional Economic Summit Teen Conference Panhandle/HUB 4-H Shooting Sports 4-H camp activity Food safety advisors handbook NIPF workshop Urban & community horticulture
OR, UT, WA	Potato geospatial project
CO, NE	Ultrasound Evaluation project
UT, WY	Alpine 4-H camp
MT, WY	WIN in the Rockies
UT, WA, CA, OH	Dairy reproductive research and extension
CA, CO, HI, OR, MA, OH, PA	SARE-Small farms-alternatives
WI, PA, KY	Dairy forage research
NV	Farm Management MV grazing school

Scope of Project	Title of Project
MT	Agricultural Entrepreneurs Youth Development/4H 4-H impact study Professional Forestry continuing education
CA,OR,ID,NV	COIN-beef cattle
CA	Ultrasound evaluation
IN	4-H youth exchange program
MN	Potato production

F. Integrated Activities

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State_____Idaho_____

Check one: ____ Multistate Extension Activities
____ Integrated Activities (Hatch Act Funds)
__X_ Integrated Activities (Smith-Lever Act Funds)

	Actual Expenditures				
Title of Planned Program/Activity	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Goal 1; Competitive agriculture		$508,586	$594,100	$568,406	
Goal 2; Safe Food		6,136	4,769	9,466	
Goal 3; Health & Nutrition		1,455	3,706	4,337	
Goal 4; Natural Resources & Environ		118,495	118,405	99,808	
Goal 5; Econ Oppor & Quality of Life		286,465	165,517	106,781	
Total (Smith-Lever)		$921,137	$886,497	$789,099	

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Director Date

UI Faculty with Joint Extension – Ag Experiment Station Appointments

FACULTY MEMBER	PRIMARY GOAL AREA	FACULTY MEMBER	PRIMARY GOAL AREA	FACULTY MEMBER	PRIMARY GOAL AREA
BULGIN	1	RIESENBERG	5	GUY	1
DALTON	1	ALLEN	1	HAFEZ	1
GLAZE	1	KING	1	HOPKINS	1
OTT	1	NEIBLING	1	HUTCHINSON	1
RICHARD	1	QUALLS	4	MAHLER	4
VANDERWAL	1	SHEFFIELD	4	MILLER	1
ZAUGG	1	CULBERTSON	2, 3	MOHAN	1
ANDERSON	ALL	McCURDY	2	MORISHITA	1, 4
FRITZ	ALL	RAIDL	3	NOLTE	1
FOLTZ	5	SHAKLEE	5	OLSEN	1
GRAY	5	ALVAREZ	1, 4	PRATHER	4
GUENTHNER	1, 5	BARBOUR	1	ROBERTSON	1
HIGGINS	5	BARNEY	1	SCHWARSLANDER	4
MAKUS	1, 5	BECHINSKI	4	SHEWMAKER	1
NELSON	5	BROWN	1, 4	STOLTZ	1, 4
PATTERSON	1,	ELLSWORTH	1, 4	THOMPSON	1, 4
RIMBEY	5	GALLIAN	1	TRIPEPI	1
TAYLOR	1, 5	SANDERS	4	MAHONEY	4
KARSKY	1, 5	GEARY	1		