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2006 Accomplishments and Results Report

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Joint Themes

Goal	Theme	Joint or Extension
GOAL 1	*Agricultural Profitability*	Joint
	Agricultural Competitiveness	Joint
	Ornamental/Green Agriculture	Joint
GOAL 2	*Food Safety*	Joint
GOAL 3	*Human Health*	Joint
GOAL 4	*Air Quality*	Extension
	Agricultural Waste Management	Joint
	Forest Management	Joint
	Water Quality	Joint
GOAL 5	*Farm Safety*	Joint
	Youth Development/4H	Extension
	Tourism	Joint
	Impact of Change on Rural Communities	Joint
	Leadership Training and Development	Extension

University of Minnesota Extension
2004-2005 Federal AREERA Accomplishments and Results Report
Executive Summary

University of Minnesota (UMN) Enrollment Measures

a. Demand: There was significant demand for Extension resources in 2006. As a result:

- UMN Extension served 474,656 Minnesotans in 17,920 educational events. Other federally funded programs managed by Extension—Nutrition Education Programs and Farmer-Lender Mediation—reached an additional 256,245 for a total of 730,901.
- There were 5,883,296 visitors to UMN Extension's Web site (rated by Google as the most for any state Extension.) These visitors viewed 48,334,566 pages.
- Extension handled 33,062 phone calls via four phone-answering services.

b. Outreach to Underserved Populations

- In 2006, 9.9% of participants in programs described in the 2004-06 POW were persons of color. Our entire reach is 17% when including FNEP and Farmer-Lender Mediation programs.
- Nine of the 14 federal programs designed ways to reach underserved populations.
- Progress has been made in addressing recommendations of the 2005 diversity committee, as described in this report.

Multi-state Engagement

- Useful Minnesota programs were being adopted by other states.[1]
- Of the 14 federal programs, 86% identified cooperative relationships with Minnesota's bordering states. 100% reported multi-state activities.
- UMN Extension's Distribution Center delivered 1000 educational titles to 50 states, Puerto Rico, Canada and four continents.
- We've purchased services from Iowa State Extension to provide cost-effective phone service to Minnesotans. In 2006, 5,877 Minnesotans were served.

Other Performance Measures, including Integrated Service: We made "being the best in the business" our goal in 2003. Integrated efforts are how we achieve that goal.

a. Quality and centrality to mission

- All programs are demonstrating the research connection for Extension programs.
- 128 highly specialized regional educators are at work in Minnesota. 36 specialized educators and 207 program coordinators and educational assistants work in county offices.
- Partnerships with five colleges fund 74 faculty in academic departments.
- The percentage of field educators hired with MS or PhDs in their area of specialization increased from 51% in 2000 to 87% in 2006.
- In 2006, evaluation specialists were hired within each capacity area.

b. Development and leveraging of resources

- Budgets for county educator and coordinator positions increased by an average of 4.9% statewide in 2006.
- Grants and income increased by 5% from 2005 – 2006.
- Investment from UMN in Extension increased by $1.8 million / year since 2004.

[1] E.g., Access e.Info, Business Retention and Expansion, U-Facilitate, Onsite Sewage Treatment, Radon Education, Agricultural Risk Management, Parents Forever, DollarWorks

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2004 - 2005 Federal (AREERA) Accomplishments and Results Report

I. Programs

GOAL 1

AN AGRICULTURAL SYSTEM THAT IS HIGHLY COMPETITIVE IN THE GLOBAL ECONOMY

Overview:

Agriculture, Food and Environment programs address crop and livestock production systems that are profitable, sustainable, environmentally sound, and safe. Issues include business management and marketing, environmental stewardship, food systems, agriculture policy, and science and technology. Gardening and Commercial Horticulture programs include educating northern home gardeners as well as horticulture production and service industries. The Master Gardener program trains volunteers to work with consumers. Program teams contributing to Goal 1 are very closely integrated through the management of program teams and common involvements in the industries where agriculture and horticulture happen.

Table 1: Inputs and Outputs Summary, Federal Goal #1, University of Minnesota Extension, 2005

	Program 1: Farming for Tomorrow	Program 2: Bountiful Horticulture: Gardens and Food		Total all Goal 1 Programs
		Commercial	Consumer	
# FTE	38.85	13		51.85
# Program Participants	92,625	25,820	129,600	248,045
Total indirect contacts by Master Gardener Volunteers	---	---	2,941,267[2]	2,941,267
% Participants of color	3.6%	3%		
# of trainers / volunteers trained	--			
Number of meetings, workshops, presentations, seminars, etc.	1,399	167	1000	2,566
Number of consultations with individuals, families or business firms	14,510	N/A	N/A	14,510
# of volunteer hours	N/A	N/A	104,142	104,142
Numbers of presentations to media	5,523	1,154		6,677

Table 2: Goal 1 Sources of Funding, University of Minnesota Extension

Smith Lever 3B&C	State	County	Grant/Contract	Hatch
$724,165	$1,442,675	$1,415,071	$261,438	$404,269

Outcomes: We are reporting on three joint themes, three Extension programs and five integrated research projects for goal 1 this year. These programs create an economic impact for the agricultural industry by informing business decisions, integrating research and education about the health of crops and livestock, and developing and disseminating crops adaptable to Minnesota's climate. These programs link Extension to research from the College of Food, Agricultural and Natural Resource Sciences.

[2] This year, for the first time, a data base system allowed us to collect all of interactions delivered by active Master Gardener Volunteers throughout the State of Minnesota.

Key Theme: Agricultural Profitability (Joint)

Extension 2004-06 Plan of Work: Goal 1, Program 1: Farming for Tomorrow
Program Component: Agricultural Financial Management

Description: Agricultural producers face uncertain markets with narrow margins, as well as complicated management decisions about land ownership. Research-based information assists producers to weigh the cost and benefits of risk management approaches to protect their businesses from adversity while maintaining profitability. We provide educational programs and software tools that educate producers and professionals about risk management concepts, tools to mitigate risk, the historical returns of risk management approaches, and sound practices in estate planning.

In 2006, this program (which makes yearly impact reports to CSREES) continued to attract sponsors and producers because of its reputation for impact-driven education. In addition, Winning the Game programs were offered in more than ten states in 2006.

a. ***Impact:***

- **Behavior Change and Economic Impact:**
  Pre-harvest Marketing Workshops. Follow-up evaluation survey results indicated that farmer-participants changed marketing practices as a result of attending the program. These changes enabled them to increase net farm income by $8,067 per farm, on average.

  Post-harvest Marketing Workshops. Follow-up evaluation survey results indicated that farmer-participants changed their post-harvest marketing practices as a result of attending the program, enabling them to increase their net farm income by $6,280 per farm, on average.

  Farm Transfer Workshops. In a six-month post meeting survey after participating, 57% of participants said they had started their farm business transfer plan and 59% said they had started their personal estate plan.

  Farm Transition Plans. Focusing only on the 37 farm units that stated they had completed their farm transition plan, multiplied by the FINBIN farm balance sheet asset value of $1.125 million, the total financial impact is $41.6 million or $79,460 per program participant. The financial impact of the program (combining farm transition and estate planning asset management done by 178 survey respondents) is $220.5 million or $420,726.07 per the 524 program participants. Accounting for program costs, the benefit per participant per dollar spent on this educational program is $16.25.

b. ***Source of funding****:* Smith-Lever 3b&c, state, county, sponsorship fees, grants

c. ***Scope of impact:*** State, Multi-state

MAES Plan of Work: Goal 1

Description: Red River On-Farm Yield Trials continue their dual purpose as an Extension program and performance testing of released cultivars and advanced lines. These results continue

to be an important information tool used by Extension crop specialists in their work with producers across the state. Research continues to develop winter wheat as a possible alternative to spring wheat and barley. In related work on small grains, researchers are validating the WheatScout decision aid for management of grass weeds in spring wheat.

a. Impacts

The adaptation of producers of the appropriate timing of fungicides is improving disease control, grain quality, and food safety. As a sign of the impact of work to develop winter wheat as an alternative to spring wheat and barley, a significant increase was reported in winter wheat acreage in 2005.

b. Source of funding: Hatch

c. Scope of funding: State, multi-state

Description: Small grain producers rely heavily on herbicides for weed control, but growers continue to search for methods to reduce herbicide inputs. Field experiments were conducted to evaluate the efficacy of reduced herbicide rates, crop rotations, cultural methods and tillage on weed control in small grains. Data from these trials were made available to the public in the Minnesota Extension publication *Cultural and Chemical Weed Control in Field Crops.* Wild oat remains the number one weed control problem in small grains in Minnesota. Research was conducted to evaluate the emergence pattern of wild oat, and determine if emergence can be predicted using soil growing degree days and/or hydrothermal time.

a. Impacts

The results of research to develop a wild oat control predictive model for use by agricultural crop consultants to date have enabled small grain producers to reduce wild oat herbicide rates an average of 10 percent.

b. Source of funding: Hatch

c. Scope of impact: State, multi-state

Key Theme: Agricultural Competitiveness (Joint)

<u>Extension 2004-06 Plan of Work:</u> Goal 1, Program 1: Farming for Tomorrow
Program Component: Dairy Modernization

Description: The UMN dairy team continues to have an impact on the health and economic welfare of the dairy industry by working with dairy producers and partners. An ongoing program effort, reported yearly to AREERA, is the *Quality Counts* program. This collaborative effort increases dairy income by reducing somatic cell counts. The Dairy Modernization program proved an additional impact this year as progress was made to house dairy cows in compost dairy barns. Compost dairy barns use dry wood shavings and sawdust as bedding in order to enhance the health and longevity of cows.

a. Impact

Behavior change:
- Dairy farmers continued to use best practices that controlled somatic cell counts.
- Dairy farmers moved approximately 1,500 cows to compost dairy barns in order to utilize new technologies in improving the cows health and longevity of dairy cattle.

Improved health for milk-producing herds:
At the beginning of the decade, Minnesota was among the dairy states with the highest average somatic cell counts. According to UMN scientists, these high counts robbed farmers of nearly $53 million in potential income every year. Extension, UMN and statewide partners took action to improve cell counts. Table 3 shows progress since 2002.

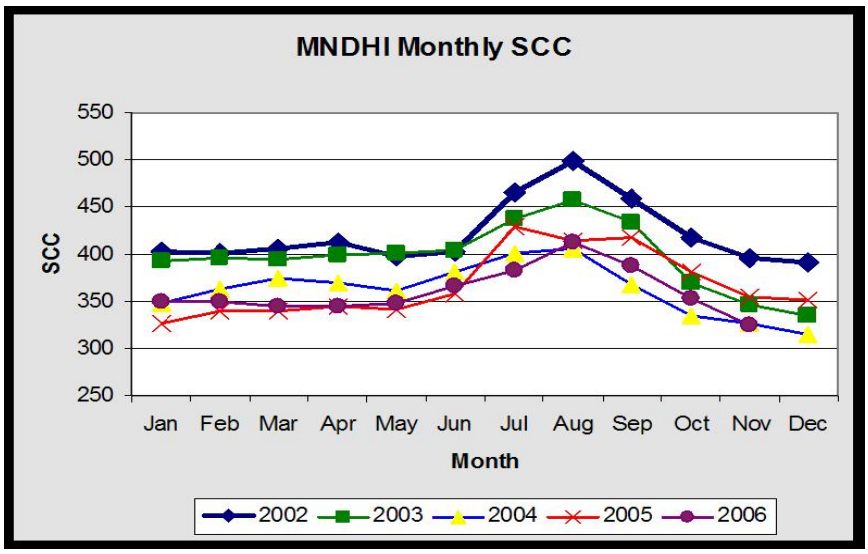


Table 3: Somatic Cell Count Monitoring in Minnesota's Dairy Industry: 2002-2006

In 2006, efforts related to *Quality Counts* possibly resulted in a reduction of 50,000 somatic cell counts for herds attending the program. This could result in 3,500 per herd or a program impact of approximately $350,000.

Research findings about utilization of compost dairy barns:
By collecting information on cow health, the dairy team worked to better understand the impact of compost dairy barns on cow health and longevity.

In relation to hock injuries, 0.97% of cows had swollen hocks. That compares with 1.8% for sand stalls and 14.1% for mattress stalls in a study conducted at UMN last year. Even more dramatic are results discovered for lameness prevalence. Only 7.8% of the cows were lame, with two herds having no lame cows at the time of our visit. That compares very favorably to 24.6% lameness prevalence in a UMN study conducted with cows housed in free stalls. This is a strong indication that cow comfort is improved in compost dairy barn facilities.

Two problems – air quality and maintenance of bedding – were discovered during this study. The Dairy Team has submitted grant proposals to conduct follow-up studies.

Results were disseminated at annual Minnesota Dairy Days held in January at nine locations throughout the state and were posted on the internet.

Business retention and profitability:
The Minnesota Dairy Initiative seeks to make dairy a more viable industry in Minnesota. From 2005 - 2006, there was an increase in production per cow of 2.5%, or $29,016,000 from Minnesota's 450,000 cows. Minnesota's overall milk production in total pounds went up 496 pounds per cow and each pound of production is worth an additional thirteen cents. Because it was an especially hot summer, informed management practices in maintaining climate, feed, water and infrastructure, were important to this productivity.

b. Source of funding: Smith Lever 3b&c, state, county, State of Minnesota Dairy Initiative program, Minnesota Department of Agriculture, Sponsorships, Dairy Associations

c. Scope of impact: State, Multi-state

MAES Plan of Work: GOAL 1, Program 1, 2, 9 and 13

Description: Research to support Minnesota's dairy industry focused on milk quality, dairy cattle health and productivity. Extension uses the information derived from this research to help small and medium-sized Minnesota dairies in its Dairy Modernization program.

a. Impacts

Examples of recent research results and impacts:

- Researchers developed a model to predict future herd performance using 2003 and 2004 data from 1,500 Upper Midwest herds in the MilkLab database. The use of the model predicted with greater than 80 percent accuracy whether a herd will violate a specified somatic cell count quality standard in the next 30 days. These results help producers detect mastitis in their cows and prevent low quality milk from entering the bulk tank.
- Two Holstein sires comprise approximately 30 percent of the global Holstein gene pool, creating concern about inbreeding. Deterioration of female fertility, in particular, has created renewed interest in crossbreeding to capitalize on hybrid vigor to improve female fertility and, consequently, length of herd life. Two-thirds of cows at Minnesota's West Central Research and Outreach Center, Morris, and the St. Paul campus are crossbreds of Holstein, Jersey and Montbeliarde. Comparisons to the other one-third documents potential gains from crossbreeding of dairy cattle for improvement of traits related to reproduction, health, and fitness, which could have tremendous economic consequences for dairy producers domestically and internationally.
- A multi-site, multi-herd controlled field study is validating the efficacy and quantifying the cost-benefit of incorporating an on-farm culture system for strategic treatment of clinical and subclinical mastitis. This could promote more judicious and strategic use of antimicrobial to treat mastitis cases, improving animal health and well-being, improving economic sustainability of dairy farms, and improving dairy food safety and quality.

b. Source of funding: Hatch

c. Scope of impact: State, multi-state

<u>Extension 2004-06 Plan of Work:</u> Goal 1, Program 1: Crops
Program Component: Soybean Aphid Management

Description: The soybean aphid arrived in Minnesota in 2001. By 2003 the aphid was causing an estimated $188 million yearly loss. MAES researchers developed a computer simulation program called the Soybean Aphid Growth Estimator (SAGE). The model informs growers as to how quickly an aphid population can exceed the economic threshold in their specific locations, and has helped prevent over-treatment of fields with systemic insecticides. A team of researchers and Extension specialists have been working closely with farmers and crop consultants to develop recommendations. The Soybean Aphid Growth Estimator model continues to evolve. Future versions will factor in temperature, rainfall, planting date, plant growth stage, variety, soil type and natural predators. Growers can combine the computer prediction of aphid growth with real-time data observed with field scouting to do the right thing in the field at the right time.

a. Impacts

Profit retention:
The Minnesota Extension and Experiment Station soybean aphid response has attracted national recognition. The use of the SAGE model combined with field scouting and Extension advice has prevented an estimated $200 million in crop losses and reduced pesticide needs in one year alone.

Development of natural prevention agents:
At the same time, pesticide application is a short-term solution; researchers have been studying the potential of natural soybean aphid control. Working within the MAES Insect Quarantine Facility on the St. Paul campus, researchers have been testing the potential of a sting-less wasp as a natural predator of the soybean aphid. They found that the wasp is effective and will not harm things other than soybean aphids and a few of its close relatives. The U.S. Department of Agriculture and the North American Plant Protection Organization are evaluating the research before approving release of the beneficial insect. If approval is received soon, the sting-less wasp will be released on 30 small plots throughout Minnesota in 2007, and Extension and campus researchers will work together with farmers to evaluate this new tool in the field.

b. Source of funding: Smith-Lever, Hatch

c. Scope of impact: State

Key Theme Ornamental/Green Agriculture (Joint)

<u>Extension 2004-06 Plan of Work:</u> Goal 1, Program 2: Bountiful Horticulture: Gardens & Foods
Program Component: Commercial Vegetable and Fruit Production

Description: Minnesota's cold climate challenges the state's potential to develop a fruit and vegetable industry. Breeders at the UMN Experiment Station have overcome this challenge through the breeding of cold hardy plants. Extension horticulture programs work closely with producers to create a viable industry that use these Minnesota varieties.

a. Impact

Economic impact from UMN-bred apples:
But for the research of the University of Minnesota Cultivar Researchers, the plausibility of an apple industry for Minnesota would be slight. Extension horticulture programs work closely with over 100 apple orchard producers to grow new and old Minnesota cold hardy varieties. In 2006, the apple industry is worth approximately $20 - $25,000,000. Eighty percent (80%) of the orchard acres are growing University of Minnesota-bred apple varieties.

b. Source of funding: Smith-Lever b&c, Hatch, State

c. Scope of impact: State, Multi-state

<u>MAES Plan of Work</u>: GOAL 1, Program 11

Description: The apple breeding program funded by MAES had its first success with the release of Haralson in 1922 which remains a Minnesota favorite. But the Honeycrisp variety has become the major success story for Experiment Station apple breeders. Honeycrisp is not a firm apple, and it's crisp. It keeps well—up to eight months with proper refrigeration. However, it is an apple that is susceptible to bruising, because what makes it so "explosively crisp" also means the apple must be picked and packed carefully. Extension provides education to producers to address this concern.

Fruit breeders have also been building on the success of Honeycrisp with a new release—Zestar—an early maturing apple.

a. Impacts

Honeycrisp was named the official state apple, courtesy of a class of fourth graders in a St. Paul suburban school who pushed through legislation last year, and has gained worldwide popularity. Sold in Europe as Honeycrunch, the apple has been in demand from Nova Scotia to South Africa. Today more than 300 farms in Minnesota produce 40 million Honeycrisp apples a year. Extension horticultural specialists work with growers to help them handle the Honeycrisp apple with care and increase their profits.

In 2006, growers planted Zestar for the first time. It will fill a needed niche in the early-apple market. Sales of root stock more than doubled expected demand.

b. Source of funding: Hatch, Smith-Lever

c. Scope of impact: State, multi-state

GOAL #2:
A SAFE AND SECURE FOOD AND FIBER SYSTEM

Overview:
Fifty percent of the food dollar is spent on meals prepared by the food service industry. Food processing plants are integral to the safety of food sold in grocery stores. The majority of food-born outbreaks in Minnesota are caused by improper handling in food service situations, and this year there was national alarm caused by improper handling of food in processing plants.

Food Safety programs work with consumers, food service workers, producers and processors using relevant and researched information to reduce food borne health hazards in Minnesota.

Table 4: Inputs and Outputs Summary, Federal Goal #2, University of Minnesota Extension, 2005	
	Food Safety: Producer to Consumer
# FTE	15.6
% Program Participants	3,942
# Program Participants of Color	10.7%
Number of meetings, workshops, presentations, seminars, etc.	101
Numbers of media presentations made	10

Table 5: Sources of Funding for Federal Goal #2: University of Minnesota Extension, 2005				
Smith Lever 3B&C	State	County	Grant/Contract	Hatch
$206,236	$366,844	$339,924	$323,862	$9,033

Outcomes: We are reporting on one theme, two program components and two joint research projects for 2006. The food safety team created an impact by working closely with the food industry, serving the industry with educational events, and responding to industry trends and issues. As reported last year, the program is reaching out to provide food safety information to caregivers of seniors and children. That effort continued this year, with continuing reports of knowledge gain and application. This year, new impacts were made through programming for pest management in the food industry and education for Latino food service workers.

Key Theme: Food Safety (Joint):

Extension 2004-06 Plan of Work: Goal 2, Program 1: Food Safety: Producer to Consumer Program Component: Pests and Pest Management Inspections in Food Processing Facilities

Description: Through collaborative efforts of the Department of Entomology and Extension, information on pest management is provided to farmers, industry professionals, food processing organizations and more. This year, the collaboration responded to requests to expand outreach of this educational programming – moving education from food safety inspectors to the retail food service facilities that they inspect.

a. Impact

System improvement:
As a result of training, 72% of food safety inspectors applied what they learned when inspecting food facilities. Their priorities include educating firm operators and reviewing pest control management documents to alleviate pests in food processing facilities.

Inspectors recommended that a similar course be conducted for retail certified food managers. Funding was procured and a conference for the industry was held on September 20, 2006.

The program was recommended and developed for inspection personnel at local health agencies with a delegation agreement with the Minnesota Department of Agriculture so that inspections are done in a consistent and uniform manner.

b. ***Source of funding:*** Smith Lever 3b & c, state, county, sponsorship fees, US Food and Drug Administration

c. ***Scope of impact:*** State

<u>Extension 2004-06 Plan of Work:</u> Goal 2, Program 1: Food Safety: Producer to Consumer Program Component: ServSafe for Spanish-speaking Food Service Workers

Description*:* In 2005, we reported on a major program effort to create cultural and linguistic adaptations to our successful food safety program for food service workers so that Latino service workers could be certified by the National Restaurant Association. That was accomplished in 2006. The program was designed through collaborative work with food service regulatory agencies and businesses. The course format was spread over four weeks rather than a one-day course, responding to feedback from Latino food service workers.

a. Impact

Equity in knowledge gain and certifications:
The test results of Spanish-speaking food service workers taking the National Restaurant Association exam were remarkable. Nine of ten passed the exam; the average passing score was 93.19%; the highest passing score was 99%. In earlier versions of the test, no more than 40% of Spanish-speaking workers had a passing score and the average of those that passed was only 78%. It is logical to assume that more knowledgeable workers create safer food conditions in the service industry.

b. ***Source of funding:*** Smith Lever 3b & c, state, county, participant fees

c. ***Scope of impact:*** State

<u>MAES Plan of Work:</u> Goal 2: To ensure an adequate food and fiber supply and food safety through improved science based detection, surveillance, prevention, and education

Description: The development and use of "real-time" assays for food pathogens is a boon for the food industry in controlling potential food borne outbreaks associated with Listeria and Salmonella. Last year's Accomplishment Report discussed success in developing a Listeria assay as a quick and sensitive detection method.

a. Impacts

Use of the Listeria assay has increased in the commercial world as more firms recognize the concept of using the test to identify presumptive positive samples to be followed up with more

intensive diagnostics. This approach permits rapid screening to be done cost-effectively. Since then, researchers have been using this approach to develop a single step Salmonella Indicator Broth. The assay performed comparably multi-step diagnostic test kits currently available. Researchers are taking the version to a beta test with a commercial partner this year.

b. Source of funding: Hatch

c. Scope of impact: State

Description: MAES research is focusing on the time it takes the disease-causing bacterium *Listeria monocytogenes* to grow to dangerous levels in foods such as deli meats and hot dogs. The current food labeling system with phrases like "best if used by" and "sell by" are not adequate to prevent illness from food borne bacteria. It would be better if those labels where based on safety standards like temperature history and potential levels of disease-causing bacterium.

a. Impacts

Researchers helped develop a system that allows manufacturers to evaluate the safety of their products. Small chemical and electronic food label tags can track the time-temperature history of food products during their journey from processing plant to supermarket. This allows more accurate labels with statements such as "use by the date indicated, unless the time-temperature history tag turns red." Food companies can use these tags in Europe, but it will be up to the U.S. government to mandate their use to help improve food safety in the United States.

b. Source of funding: Hatch

c. Scope of impact: State, multi-state

GOAL #3:
A HEALTHY AND WELL-NOURISHED POPULATION:

Overview:
Sedentary lifestyles and poor dietary habits have contributed to the doubling of overweight frequency among children since 1980. Associated diseases such as diabetes are on the rise, robbing families of quality of life. Creating environments that promote healthy eating and physically active lifestyles is a positive approach to the complex issue of childhood obesity.

Our Nutrition Education Programs serve food stamp eligible and other low-income families through funding of approximately $6.3 million from the USDA, matched by approximately $6.3 million from state and local partners. These dollars fund the research, service, and community connections that help to change the environment where children learn about nutrition.

Table 6: Inputs and Outputs Summary, Federal Goal #3, University of Minnesota Extension, 2005		
	Nutrition Education Healthy/Active Communities program	*Nutrition Education Program (FNEP/FSNEP)*
# FTE	2.4	99
# Program Participants	1,170	*231,031*
% Participants of Color	8%	*32% (Population in poverty = 100%)*
# of Trainers Trained	45	*n/a*
Number of meetings, workshops, presentations, seminars, etc.	69	*n/a*
Number and percentage of persons served from underserved populations		*231,031 (100%)*
Number of indirect contacts	2,384	*1,019,154*
Number of media contacts	24	

Table7: Sources of Funding for Federal Goal #3, University of Minnesota Extension, 2005				
Smith Lever 3B&C	State	County	Grant/Contract	Hatch
-0-	$310,159	$48,155	$6,147,613	$54,835

Outcomes: We are reporting on one joint theme, one Extension program and three relevant research projects for goal 3 this year. Outcomes include institutional awareness and policy change happening where children learn habits of nutrition and exercise.

Key Theme: Human Health (Joint)

Extension 2004-06 Plan of Work: Goal 3, Program 1: Health and Nutrition Education
Program Component: Obesity Prevention in Communities

Description: With Smith-Lever funding, the team of regional educators and campus staff provide education and facilitation to parents, teachers, coaches, and decision-makers who affect the diet, exercise and health of young children. The goal is to stimulate system changes that affect environments where children receive their messages on health and nutrition. In 2006, Extension utilized a package of resources to guide local decision-makers in the development of School Wellness Policies. Tools include meeting guides, needs assessment tools, sample and model policies, background information on student health, examples of successful school health initiatives, action plans and policy monitoring tools.

a. Impacts

Local policy changes:
Among schools provided with facilitation, 100% adopted new policies that promote wellness. These policies incorporated information presented during facilitated sessions. Schools made changes that include removing sugary beverages from vending machines, offering only 1% or skim milk for school meals, offering non-food rewards in classrooms, and serving whole grain foods in the classroom. Their new policies were selected as a result of information and facilitation from Extension. The policies they developed were significantly more detailed than those advocated by Minnesota's model School Board Wellness Policy.

b. ***Source of funding:*** Smith-Lever b&c, State

c. ***Scope of impact*****:** State

<u>MAES Plan of Work:</u> Goal 3: Through research and education enable people to make health-promoting choices.

Description: Current food service approaches in some public schools contribute to unhealthy eating among children. Budget constraints force schools to purchase mass-produced, low-cost foods that are offered through large food distributors—pizza, frozen and fried chicken fingers, frozen French fries, and fruit juices with high-fructose corn syrup. Beginning in 2004, MAES applied economics researchers have been collaborating with Independent School District 2870 in Hopkins, Minnesota to analyze the economics of student food choices, the school budget environment, and the impact of state and federal programs on school feeding programs. The goal was to demonstrate an economically viable school lunch program that would encourage healthful eating habits and increase local sourcing of nutritionally sound food.

a. Impacts

The resulting food service program (called "Royal Cuisine") has received much attention from the media as well as nutritionists and food service directors nationwide. Data for 330 Minnesota school districts was analyzed to derive recommendations for improving the nutritional quality of school lunches. The study found that lunch sales do not decline when healthier meals are served, and more nutritious lunches do not necessarily cost more – both widely held views. The research provides specific policy recommendations for school lunch programs that will help tackle the growing problem of obesity in children.

b. Scope of funding: Hatch

c. Scope of impact: State, multi-state

Description: In another project, researchers completed plate waste studies in two St. Paul elementary schools to examine consumption of partial whole grain foods—a 50:50 blend of red whole wheat/refined flour for pizza and French bread. The study revealed consumption was similar for both of the pizzas.

a. Impacts

Results of this small but targeted study showed that incorporation of whole grain flour into grain-based foods is a method that families and school lunch program managers can use to increase whole grain intake, and get children accustomed to whole grain products.

b. Scope of funding: Hatch

c. Scope of impact: State, multi-state

Description: Researchers have been investigating the dietary habits of minority and at-risk populations. In one study they surveyed and measured height and weight and calculated the body/mass index on 280 mother/child pairs living in urban homeless shelters. Results showed that almost 80 percent of the mothers classified as overweight or obese and approximately 46 percent of the children were classified as at risk for overweight or overweight. The researchers also studied the environmental factors that influence the mothers' and their children's dietary habits. Another study evaluated the dietary behaviors and nutrition among inner-city, multi-ethnic youth attending a 10-week garden program.

a. Impacts

The first study found that limited cooking and storage facilities in the shelters influenced shopping and dietary behavior of women and their children. Women spent more money to buy small food packages to fit into hotel size refrigerators. After sharing findings with the shelters, one has replaced small refrigerators with a full-sized one. In the garden program it was found that boys significantly increased their fruit and vegetable intake by the end of the program, while girls significantly increased consumption of meat. The conclusion was that garden programs do have the potential to positively impact inner-city youth nutritional education and food choices.

b. Source of funding: Hatch

c. Scope of impact: State

GOAL #4:
AN AGRICULTURAL SYSTEM THAT PROTECTS NATURAL RESOURCES AND THE ENVIRONMENT

Overview

Four Extension program clusters address Goal #4:

1. Environmental safety and management programs address drainage issues, manure management, pesticide safety and waste and by-product management. In addition, this year we are describing housing technology programs which work to increase home environmental safety by addressing radon in the housing industry.

2. Natural Resource Management and Utilization programs assure that every Minnesotan, now and in future generations, can continue to enjoy and benefit from the wealth of Minnesota's natural resources. Minnesotans are mobilized to make greater use of the land and timber, and to preserve our land and timber for next generation. Programs mobilize and educate volunteers, citizens, homeowners, professionals, loggers and tree inspectors.

3. Environmental Science Education Programs are a catalyst for environmental education that occurs in school and community settings, with a special emphasis on helping teachers target underrepresented youth with education on the environment. Practitioners are better able to administer Minnesota Statute 115A.073 which states that pupils and citizens should be able to apply informed decision-making processes to maintain a sustainable lifestyle.

4. Water Resource Management and Policy Programs provide key audiences with the tools, skills, education and alternative solutions that make Minnesotans good stewards of Minnesota's waters and shores.

Table 8: Inputs and Outputs Summary, Federal Goal #4, University of Minnesota Extension, 2005

	Program 1: Environmental Safety and Management	Program 2: Natural Resource Management and Utilization	Program 3: Environmental Science Education	Program 4: Water Resource Management	Total Goal 4
# FTE	2.2	7.4	3.7	8.6	21.9
# Program Participants	11,945	4,704	4,055	49,607	70,311
% Program Participants of Color	3.3%	2.4%	7.3%	1%	
# Trainers and Volunteers Trained	6	140	(note: most program participants are environmental volunteers)	168	314
# of mtgs., workshops, etc.	101	191	35	462	789
# of consultations	904	532	11	97,202	98,649
Media Presentations	100	68	35	255	458
Newsletters and Publications Distributed	n/a	10,706	n/a	n/a	

Table 9: Sources of Funding for Federal Goal #4, University of Minnesota Extension, 2005

Smith Lever 3B&C	State	County	Grant/Contract	Hatch
$357,222	$827,440	$597,835	$136,318	$130,018

Outcomes: We are reporting on four themes this year – one Extension and three joint. These describe five Extension programs and six integrated research projects. Outcomes create positive and responsive local outcomes for Minnesota's air, water quality and forests. Because these programs usually mobilize citizens to improve the environment, the programs result in an increased capacity among citizen volunteers, land owners and businesses that support the cause of improving Minnesota's environment.

Key Theme: Air Quality (Extension)

Extension 2004-06 Plan of Work: Goal 4, Program 1: Environmental Safety & Management
Program Component: Radon Mitigation

Description: Courses teach radon measurement and mitigation for the National Radon Certification program, providing expert information on water intrusion, residential energy use, and indoor air quality – especially radon. Target audiences include builders, contractors, public health officials, home inspectors and other housing-related professionals. The goal is to improve the long-term quality, efficiency, environmental health and durability of homes and other buildings in Minnesota and other cold-climate regions of the U.S.

a. Impacts

Disease prevention:
Each year, MURC (Midwest Universities Radon Consortium) trains approximately 700 professionals in radon measurement and mitigation. Of these, approximately 160 will (based upon national averages) mitigate radon in about 8,320 homes per year. Based upon U.S. EPA estimates, this volume of radon reduction will result in over five additional lives saved from lung cancer each year. Over the past 18 years, MURC trained contractors have mitigate about 360,000 homes which results in about 225 lives saved from residential radon related lung cancer each year.

b. Source of funding: Smith-Lever 3b&c, State, Midwest Universities Consortium

c. Scope of impact: State, multi-state

Key Theme: Agricultural Waste Management (Joint)

Extension 2004-06 Plan of Work: Goal 4, Program 1: Environmental Safety & Management
Program Component: Manure Management

Description: From February 2003 to March 2006, 843 participants in eighty Extension workshops prepared two-field nutrient management plans for their farms. The three-hour workshops were hosted by county feedlot officers, conservation districts, Extension offices or livestock producer organizations. Most participants were non-CAFO (Concentrated Animal Feeding Operation) livestock producers who must comply with manure management requirements under state rules.

a. Impacts

Behavior change:
A survey was sent to 669 participants following the cropping season when the Nutrient Management Plans would have first been implemented. Of the 50% who responded, 55% had completed plans for the entire farm as a result of the sessions; 3% were still completing plans, and 6% had completed plans prior to the sessions. Of respondents, the increase in practice adoption from pre-workshop to post-season was 10% for soil testing, 21% for testing manure, 22% for calibration of spreaders, 29% for crediting nutrients in manure and 33% for keeping records of manure applications. An additional 10-20% indicated that they intended to adopt the practice within two years.

Cost savings:
In the sessions, 86% of participants calculated that they would save $6 or more per acre in fertilizer purchases if they followed their new plan and 56% would save more than $10 per acre. The total crop area managed by all producer participants is estimated to be 609,000 acres. Conservatively, the program created a cost-savings for Minnesota farmers of $3,654,000.

b. Source of funding: Smith-Lever 3b&c,, State, County, MN Pollution Control Agency, USDA, EPA, MN Department of Agriculture.

c. Scope of impact: State, Multi-state

MAES Plan of Work: GOAL 4, Program 5

Description: Manure nutrients in excessive amounts are a growing issue for animal producers, especially in areas where cropland is limited. Researchers have been studying the use of sequencing batch reactors to reduce nitrogen, phosphorus, and carbon simultaneously from manure in a single reactor.

a. Impacts

The outcome of this project provides valuable insight on the use of one of agriculture's most abundant bio-resources for energy production. The research showed that the sequencing batch reactors system can successfully carry out the nitrification process with liquid swine manure, resulting in a nearly complete removal of ammonium nitrogen. The scientific impact of this research is the foundation to scale up the reactor so that it can be used at the farm level. Outreach efforts are providing producers, engineers, Extension educators, and technical staff practical and technical information on systems that not only help animal producers deal with manure management issues, but provide potential alternatives to fossil fuel-based energy sources.

b. Scope of funding: Hatch

c. Scope of impact: State and multi-state

Key Theme: Forest Management (Joint)

Extension 2004-06 Plan of Work: Goal 4, Program 2: Natural Resource Management and Utilization
Program Component: Urban Landscapes

Description:

Urban landscapes programs educate home owners and tree service professionals in urban and small communities to manage Minnesota's trees, improve tree selection and care for trees effectively.

a. Impacts

Knowledge change:

- 60% of participants in renewable energy programs indicated they had more knowledge about markets that exist for biomass, impacts of biomass harvesting, and other benefits of producing biomass, such as carbon sequestration. (Carbon sequestration provides natural ways to pull carbon out of the atmosphere in order to mitigate global warming.)
- 87% of participants successfully completed the Tree Inspector Certification exam.

Change in local infrastructures that protect the environment:
Due to leadership and education provided by Extension educators and campus specialists, communities are taking action to protect the environment.

- Agroforestry programming in Wadena, MN resulted in development of a grassroots organization to develop a carbon sequestration pilot project.
- The Minnesota Agroforestry Cooperative was revived. Its proposal to create a renewable energy economy in Minnesota based on perennial plants is being promoted by the Minnesota Department of Agriculture.
- A Community Wildfire Protection Plan was created in heavily-forested Itasca County.
- With leadership and consultation from U of MN Extension, USDA CSREES launched a new reporting and accountability system for Renewable Resources Extension Act funds.
- Urban landscapes educational programs derive economic benefits due to cost savings in managing water quality; reducing storm water processing, air pollution and energy needed for heating and cooling homes and building; and increasing property values. A recent study proves that annual, net community benefits for well-maintained trees are: $3 - $5 per small tree, $4 - $34 per medium tree, and $58 - $76 per large tree.
- Over 2,000 trees and shrubs were planted as a resource for ethanol production.

b. Source of funding: Smith-Lever 3b&c, State, Natural Resources Research Institute

c. Scope of impact: State, Multi-state

MAES Plan of Work: GOAL 4, Program 1

Description: Major forest research has been studying local and national wildfire by analyzing homeowners, communities, and neighborhood associations.

a. Impacts

The studies led to the development of outreach to support land managers and community leaders who work and live in fire-prone ecosystems. Minnesota's contribution has a national impact. The product is a model for studying community wildfire preparedness with short case studies emphasizing lessons that might be used by communities confronting similar problems. A neighborhood association study has its first publication, with insights about working with community leaders for improved homeowner preparedness.

b. Scope of funding: McIntire-Stennis

c. Scope if impact: State, multi-state

Description: MAES forest research has a 20-year history in model development and associated application for analyzing statewide timber supply. Models help identify how management can be coordinated to sustain timber production while also protecting the environment. Results are especially useful for large public ownerships, but management of private lands is also important and more difficult to control. To better understand the likely impact of private forest landowners on statewide timber supply, methods have been developed to include in the modeling system of series of constraints describing general private landowner behavior.

a. Impacts

Statewide applications have suggested industry expansion involving species other than aspen. In one example, model applications were central for analyses of a $600-$700 million pulp mill expansion in northern Minnesota.

b. Scope of funding: McIntire-Stennis

c. Scope of impact: State

Key Theme: Water Quality (Joint)

<u>Extension 2004-06 Plan of Work:</u> Goal 4, Program 4: Water Resource Management
Program Component: Citizen Measurement

Description: Minnesota's 2,560,299 acres of deep water lakes, waters and streams are vulnerable to disease-causing organisms that can be harmful to the ecosystem and to human health; however, very few have been tested for e-coli bacteria that may indicate contamination. No infrastructure or funding exists to develop this data base.

From 2004-2006, UMN Extension was the lead investigator for a six-state research project to determine whether citizens of Minnesota's lakes and rivers could become volunteer agents to test waters. The project compared the quality of data collected by trained volunteers using inexpensive test kits to data collected by professionals and sent to laboratories.

The project determined that data collected by trained volunteers is viable. This finding means that tests can be performed for a nominal cost, rather than at a cost of $400 per test if

professionals are used. (Each completed test requires five water samples.) This finding opens new opportunities for local and state government interested in water quality.

a. Impact

Inexpensive alternative for testing water quality:
This pilot study collected a data base of samples from 27 Minnesota lakes. Through this pilot test, the trained volunteer method provided Minnesota's lakes with a service that would have cost almost $11,000 if managed professionally. Ultimately, the value for Minnesota's "10,000 lakes" could be over $4,000,000.

Volunteers engaged in this pilot study contributed 1,072 hours. This is a value of $19,296 contributed to the monitoring of the health of Minnesota lakes and streams.

The results of the study are being disseminated to all state and local agency stakeholders involved in water quality issues. Findings are also being disseminated throughout the six-state region. Extension is currently seeking funds to determine what infrastructures could be utilized to train and manage volunteers to develop a statewide data base.

Informed public policy:
Data collected through the project was used by local units of government. These informed actions demonstrate the usefulness of investing in water testing. For example, volunteers identified unauthorized discharges from the wastewater treatment plant in Pine City. Several lake associations invested in additional monitoring equipment and have implemented targeted bacteria testing in tributaries. One county has authorized further bacterial monitoring as a result of the work of volunteers.

b. ***Source of Funding:*** Smith-Lever 3b&c, State, County

c. ***Scope of Impact:*** State, Multi-state

<u>Extension Plan of Work 2004-06:</u> Goal 4, Program 4 Water Resource Management
Program Component: Assessing the Impact of Arsenic Contamination on Dairy Operations

Description: The Department of Health estimates that 8% of water wells in West Central Minnesota exceed guidelines for human health exposure to arsenic. (See map below for visual of Minnesota's arsenic concentration.) Dairy producers and researchers wondered if dairy cows that drink a great deal of water containing high levels of arsenic produce milk and other dairy products with levels of arsenic. A multi-disciplinary Water Resource Team investigated. The study was completed in 2006, and findings are being distributed to local elected officials, dairy farmers and Minnesota's dairy industry.

a. Impacts

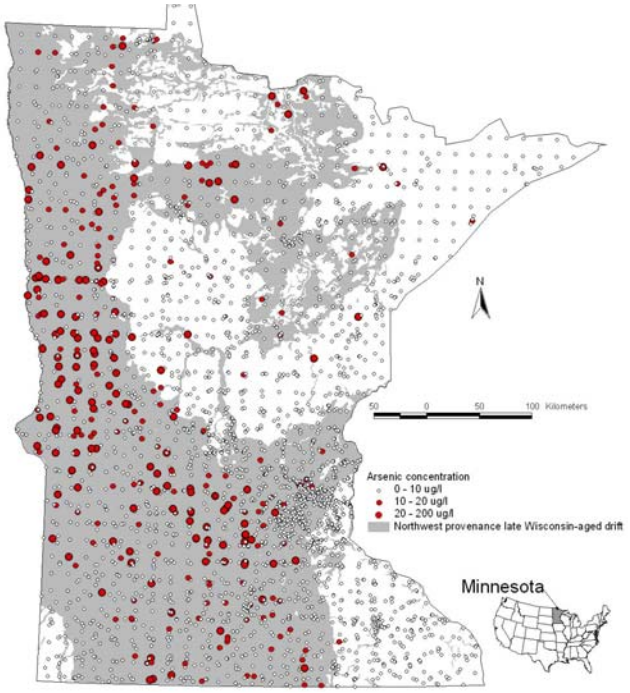
Discovery of accurate biomarker:
In humans, hair, fingernails, urine and blood are useful indicators of arsenic exposure. Until this study, no biomarker had been identified to determine arsenic levels in cattle. Researchers determined that cow's urine is a good indicator of exposure to arsenic. The amount of arsenic in urine correlated well with the level of arsenic in the water they were drinking. This important discovery will be useful to future studies.

Dairy products determined safe:
No arsenic was detected in milk or cheese from cows that drank water high in arsenic. This peace of mind improves the relationship between Minnesota's dairy industry and its consumers.

Safer Wells:
The study sampled water from over 100 wells in Otter Tail and surrounding counties and invited producers with elevated arsenic levels to participate in the study. Well owners, most of whom had never tested their well water for arsenic, were provided the results. 51% had arsenic levels greater than the 10 ppb recommended by the USEPA for safe drinking water. When presented with this information, most well owners took action to decrease their families' exposure to arsenic.

Future studies:
A second phase of the research will test meat and organ tissue to determine whether arsenic shows up in meat products or damages organs in dairy cattle in their early years. Discoveries from these studies could improve the safety of food and the productivity of the dairy industry. If so, they will be reported to CSREES.

Concentration of arsenic in Minnesota's wells.



b. Source of funding: Smith-Lever, 3b&c, State

c. Scope of impact: State

<u>MAES Plan of Work:</u> GOAL 4, Program 5

Description: A large project using remote sensing to monitor water quality of Minnesota's 10,000 lakes has been completed and provides an unprecedented assessment of lakes in terms of number of lakes and their water clarity. Classifications of more than 10,000 lakes for 1985, 1990. 1995, 2000 and 2005 provide a visual record and comparable data of the changes in Minnesota's most celebrated water resources.

a. Impact

Detailed analyses are now possible for individual lakes, as well as by county, watershed and lakeshed. The data for all lakes and years are available in a web-based mapping tool at www.water.umn.edu. The results of this research are being used by state agencies making land and lake management and policy decisions.

b. Source of funding: Hatch

c. Scope of impact: State

Description: The Minnesota River, which snakes roughly 350 miles from northern South Dakota before connecting to the Mississippi River just southwest of St. Paul, remains among the most polluted rivers in the U.S. The Minnesota River is the state's largest contributor to overall nutrient pollution, killing marine life as far away as the Gulf of Mexico. Research has shown this pollution is about 80 percent non-source-point. In Minnesota, more than 90 percent of the land through which the river flows is associated with agricultural activity, primarily corn and soybeans. An inter-disciplinary team of researchers have been devising solutions to this problem through modeling and field work. Among the ways to improve the river's water quality is to develop third crops—alternatives to corn and soybeans.

a. Impacts

Among the results of this research and its impacts:

- A model was used to simulate stream flow changes with different scenarios of conversions and wetland restoration. It showed that improving stream channel stability and replacing crops on portions of the landscape can enhance water quality.
- Learning groups focusing on hazelnut, native seed production, healthy meats/Omega 3, and woody florals are making alternative crops more feasible.
- Researchers developed policy briefs addressing the benefits of agroforestry/perennial cropping systems and policy changes needed to enhance adoption. These were presented to individuals and organization who influence negotiations for the 2007 Farm Bill.
- The research has provided leverage to expand perennial cropping systems in the tributaries of Blue Earth basin of the Minnesota River Basin.
- WATER, a simulation tool, was developed and improved to help develop realistic Total Maximum Daily Loads.

b. Source of funding: McIntire-Stennis

c. Scope of impact: State, multi-state

Description: Several drainage studies have been ongoing to improve drainage design and management alternatives to improve water quality.

a. Impact:
Model simulation has provided important insights into the role of drainage on hydrology of agricultural landscapes in Minnesota. Over an 85-year historical record, computer modeling indicates that approximately 40 percent of precipitation ends up leaving the landscape through subsurface drainage system. This research is quantifying the potential for reducing unwanted

environmental effects associated with subsurface drainage systems and is helping state agency officials make decisions regarding the allocation of conservation program funds toward improved drainage practices. A gravel filter study has shown how farmers can increase the longevity of the filters. Many tax-funded programs in Minnesota use this data to justify providing cost share dollars to install gravel filters to replace open tile inlets.

b. ***Source of funding:*** Hatch

c. ***Scope of impact:*** State, multi-state

GOAL 5
ENHANCED ECONOMIC OPPORTUNITY AND QUALITY OF LIFE

Overview:
Six program areas of expertise address Goal 5.

1) Agricultural Workplace Safety and Health Programs reduce hazards and improve specific safety-related behaviors in the work environment of the agriculture and food industry.
2) Community Youth Development and 4-H Youth Development Programs provide quality learning opportunities during non-school hours, develop Minnesota's future citizens and leaders, and help professionals and community leaders prepare to provide positive out-of-school experiences to youth.
3) Community Economics Programs educates citizens and leaders in communities and state government to think strategically about the future of economies in communities and regions.
4) Leadership and Civic Engagement Programs help leaders and citizens act knowledgably and act together in order to solve problems while staying true to principles of democracy.
5) Family Resource Management programs increase fiscal stability and money management skills of Minnesotans in order to reduce some of the causes of poverty.
6) Family Relations Programs provide research-based training, education and information to assist families as they make decisions about raising children during challenging times.

Table 10: Inputs and Outputs Summary, Federal Goal #5, University of Minnesota Extension, 2005

	Program 1: Ag Workplace Safety & Health	Program2: Youth Develop-ment	Program 3: Community Economics	Program 4: Leadership & Civic Engagement	Program 5: Family Resource Mgmt	Program 6: Family Relations	Total all Goal 5 Programs
# FTE	2.15	138.5	6.6	10.9	12.1	6.4	176.65
# Program Participants	2,916	124,909	9,603	4,272	5,249	4,236	151,185
% Program Participants of Color	4%	22.5%	5.3%	7%	30.2%	18%	
# of volunteer hrs. provided	N/A	1,374,991	420	1093	952	1596	1,379,052
# of mtgs workshops, presentations, seminars, etc.	55	13,224	205	177	440	313	14,408
# of consultations with individuals, families or business firms	399	16,195	30	26	8,557	212	25,419
# of media contacts	113	2849	132	55	91	119	3359

Table 11:Sources of Funding for Goal #5, University of Minnesota Extension, 2005

Smith Lever 3B&C	State	County	Grant/Contract	Hatch
$2,077,363	$4,594,480	$4,878,376	$2,652,445	$12,250

Outcomes: We are reporting on five themes – two Extension and three joint – three Extension programs and one integrated research project for Goal 5. Goal 5 programs are largely

preventative in nature, and so knowledge gains are important. In past years, we reported on knowledge and behavior changes in family members engaged in parenting education or financial literacy programs. These outcomes continued in 2006, largely unchanged from our past reports. We are reporting here on the outcomes of new program evaluations.

Key Theme: Farm Safety (Joint)

MAES Plan of Work: Goal 3: Through research and education, enable people to make health-promoting choices.

Description: Agriculture now has one of the highest death rates of all U.S. industries, and injuries and fatalities cost the industry close to $5 billion annually. MAES research has collected detailed data related to fatal farming work-related injuries in Minnesota. Research to determine fatality risk factors has been complemented by collaborative research with the School of Public Health examining agricultural injury risk factors in a multi-state region.

a. Impacts

Annual fatality numbers have been found to range from 22-to-31 with the largest number still occurring as a result of tractor overturns. The fatality and injury investigative work has guided research and development. For example, sensor systems were developed to detect people working near rotating powered farm equipment, and in some cases, actually shut machines off to prevent entanglement. Significant work was also conducted to estimate the economic costs of downtime associated with agricultural injuries during critical planting and harvest periods. All of the research has guided Extension educational activities aimed at preventing agricultural injuries, fatalities and occupational disease.

b. Scope of funding; Hatch

c. Scope of impact: State and multi-state

Key Theme: Youth Development/4-H (Extension)

Extension 2004-06 Plan of Work: Goal 5, Program 2: Community Youth Development and 4-H Youth Development
Program Component: 4-H

Description: With over 100,000 youth in the state participating in 4-H and with adult volunteers contributing over a million hours of service to work with youth, 4-H is one of the largest youth organizations in Minnesota.

Over the past two decades, Minnesota 4-H, like other youth organizations, experienced a steady decline in membership – especially in Clubs where on-going sustained educational relationships with young people occur. In 2004, Minnesota 4-H made a commitment to increase participation in 4-H clubs through their *Grow Green* campaign. Since then, 4-H Club membership has grown by about 5% each year.

a. Impacts

Healthy youth development:
Minnesota's 4-H program participated in a national longitudinal impact study led by Dr. Richard Lerner at Tufts University. Its findings were returned to us in 2006.

The study follows youth beginning in 5th grade through 10th grade. His study sampled more than 4,000 youth from 25 states and more than 2,000 parents. Demographically, 4-H youth in the study differed from the general youth populations in that they are less advantaged and more likely to come from rural areas.

The study found that 4-H provides sustained, positive adult-youth relations; skill-building activities; and youth participation and leadership. These opportunities were connected to key developmental outcomes of increased sense mastery, independence, belonging and generosity. While 4-H youth were similar to matched-group comparison youth in terms of overall positive youth development outcomes, 4-H youth were statistically more likely than youth in other structured after school activities to be *high* on the contributions outcome. That is, 4-H youth are more likely to value giving back to community and behave accordingly. This is aligned with another Minnesota 4-H impact study where 80% asserted that they make a difference in their communities.

The national impact study also compared MN 4-H youth (7th graders) average scores with national average scores on key constructs such as academic achievement, relationships with parents, peers and community, personal characteristics and risk behaviors. While most were not statistically significant, MN 4-H youth average scores were in a more positive direction than the national average on nearly every indicator. For example, on a scale of 0 (low) to 12 (high) on connection to community, MN 4-H youth scored an average of 7.7 while the national average was 6; and on a scale of 0 (never) to 4 (5 or more times) in terms of showing leadership in the past year, MN 4-H youth scored an average of 2.29 while the national average 1.9.

In addition, a Minnesota study compared Minnesota 4-H youth to other youth in the state of similar ages/grades (9th graders). That study showed that 4-H youth were more likely to be involved in pro-social activities like volunteering in their community than their peers (53% vs. 32%) and less likely to be engaged in risk behaviors such as watching television (15% vs. 44%), smoking cigarettes (19% vs. 26%) and drinking alcohol (23% vs. 37%)

b. ***Source of Funding****:* Smith Lever 3b & c, state, county, USDA, Center for Public Health Preparedness (CDC), National Institute of Health, U of Minnesota Experiment Station Rapid Response, and multiple other sources

c. ***Scope of Impact:*** State, multi-state

Key Theme: Tourism (Joint)

(MAES contributions to this impact are reported under their goal 1.)
(Ref. 2004-06 Plan of Work) Goal 5, Program 3: Community Economics
Program Component: Tourism Development for Minnesota's Wine Industry

Description: The University of Minnesota's Horticulture Research Center (an Experiment Station) has been breeding cold-hardy grapes since the mid '80's. So far, the center has released four varieties and there are 19 small wineries in Minnesota. Wine-making can diversify rural

economies through production, sales, and the attraction of tourism. In 2006, Extension's Tourism Center identified five wineries that could incorporate the principles of regional marketing to form a wine trail. Each was recruited to invest in a regional tourism initiative. The goal was to use research about tourism development to increase tourism profits for each vineyard through joint marketing, and to increase tourism profits throughout the region. Extension provided consultation, education, facilitation and organization to the group.

a. ***Impacts***

Regional collaboration:
The five-vineyard collaboration quickly grew to seven. The collaboration developed joint brochures, a web site, and kick-off events to draw attention to the trail. The kick-off events, coupled with attraction to the University of Minnesota's role in growing grapes and growing the industry, resulted in media articles in high-profile magazines, radio shows and newspapers.

Profits:
Though owners were reluctant to release detailed fiscal impacts, they reported in follow-up discussions that they experienced an increase of visitors (both new and return) throughout the year because of the wine trail. One winery reported doubled sales during the June and December events organized by the collaborative, compared to the same events the previous year.

According to a study from the University of Michigan, 75% of the wine industry profits are made from manufacturing and sale, and 25% of profits are earned from tourism. Minnesota growers reports similar trends, but note that tourism visitors also create buyers and repeat customers.

b. Source of funding: Smith-Lever 3b&c, State, Private Foundation

c. Scope of impact: State

Key Theme: Impact of Change on Rural Communities (Joint)

(Ref. 2004-06 Plan of Work) Goal 5, Program 3: Community Economics
Program Component: Retail Analysis and Development

Description: By surveying 174 independent retailers located in nine counties, research sought to understand what factors make business environments seem benign or hostile to independent retailers, as well what business strategies managers make when environments are perceived to be hostile. Finally, the study worked to identify which strategies were related to high performance. Nine educators statewide are promoting community-based responses to retail performance by delivering studies of retail sector performance and discussing small store success strategies.

a. Impacts

The study showed that the factor most related to perceived hostility was store patronage by local customers rather than presence of a big box store. As perceived hostility of the business environment increased, retailer performance decreased and retailers emphasized a store strategy (e.g., store layout, merchandise representation). The business strategy most related to high retailer performance was financing and operation, suggesting that independent retailers need to focus on maintaining profitability by controlling costs, prices and cash flow.

b. Source of funding: Smith-Lever 3b&c, State, Sponsorship Fees

c. Scope of impact: State

Key Theme: Leadership Training and Development (Extension)

<u>Extension 2004-06 Plan of Work:</u> Goal 5, Program 4: Leadership and Civic Engagement
Program Component: U-Lead

Description: Through workshops and long-term cohort groups, U-Lead programs help emerging, existing and elected leaders build their confidence and competence. The program helps participants understand their leadership styles, discuss authentic and effective leadership, strengthen concern for the common good, reinvent views of citizenship and more. The outcomes of this program are measured in two ways – through an analysis of skill improvements, and an analysis of where cohort group participants use their leadership skills.

a. Impacts

Skill and knowledge gains: The Community Leadership Program survey contains 28 self-assessment items that participants rank on a scale of 1 (Strongly Agree) to 4 (Strongly Disagree). These are clustered into domains that show gains in areas of use to communities and leadership confidence/competence. As shown in the chart below, all domains showed improvement. The biggest difference from pre- to post-program was in the domain of civic engagement.

Domain of Leadership	Average score from retrospective pre-program survey (the lower the better) (n=256)	Average change in factor from pre- to post-survey (n=149)	Percentage improvement
Civic Engagement	2.60	0.49	18.9%
Shared Future and Purpose	2.48	0.43	17.5%
Community Commitment	2.18	0.36	16.3%
Community Knowledge	2.73	0.43	15.9%
Personal Growth and Self-efficacy	2.18	0.34	15.8%

Putting skills to work: (n=121)
Surveys of cohort group members after the program showed that U-Lead cohort group participants got involved in their communities in new ways. The network analysis showed that eighty new positions were accepted. Strong percentages (42%) of the new involvements were with state or national organizations.

Increasing the intensity of involvements: (n=121)
Forty-three percent (43%) of respondents changed their level of involvement in organizations from "Inactive" to "Active" or "Leader" positions. Additionally, 14% changed their status of involvement from "Active" to "Leader" positions.

b. Source of funding: Smith-Lever 3b&c, State, Grants and Sponsorship Fees

c. Scope of impact: State, multi-state

II. Stakeholder Input Process Update

A. Actions taken to seek stakeholder input that encourages their participation.

In 2006 stakeholder input was gathered in the following ways:

- Regional directors worked closely with each county Extension Committee and board of commissioners to choose the investment of dollars for Extension programming. Where investment decreased, regional directors are working with decision-makers to determine future needs. Of Minnesota's 87 counties last year:
  - 86 invested in youth development programs;
  - 46 invested in agriculture and food sciences;
  - 5 invested in natural resources and environment programs;
  - 4 four invested in family development programs; and,
  - 3 invested in community vitality.
  - Some counties invested in programming from the regional office.

  Monitoring 2006 investments against 2004 and 2005 investments enabled us to measure ongoing county stakeholder commitment to Extension programs and, thus, our responsiveness to their concerns. In 2006, 87% of counties chose to increase their investment in Extension programming. County investment in Extension increased by an average of 4.9% per county. The chart below examines the investment of Minnesota's 87 counties in Extension Programming:

Table 12: assessment of county stakeholder investments in Extension.

% of Increase / Decrease	# of counties	% of Counties
-10% – -31%	4	5%
-0% - 10%	7	8%
	(Total % decreasing or maintaining)	***13%***
+ 1 – 5%	37	42.5%
+ 5 – 10%	18	20.6%
+10 – 20%	13	15%
+ 20 – 30%	4	4.6%
+30 – 40%	4	4.6%
	(Total % increasing investment)	***87%***

- External sales and grants made up nearly 18% of the total budget in 2006, up from only 12% in 2000. By examining such things as repeat sales, popularity of programs, how much consumers were willing to be charged, and satisfaction with program elements, program teams were able to make needed adjustments in programs.

B. Brief statement of the process used to identify individuals and groups who are stakeholders and to collect input from them.

The chart below describes our stakeholder input process:

Table 13: Processes for Stakeholder Input Process, University of Minnesota Extension, 2006

Group	**Process for collecting input**	**Who is responsible?**	**Documentation**
Statewide Extension Citizen Advisory Committee (Volunteers from across Minnesota with diverse interests.)	o Three meetings per year o Conference calls two – three times a year o Regular distribution of memos and reports	Dean and Director and Associate Dean for Government Constituent Relations	Agenda Minutes Meeting summaries Correspondence
Local Fiscal Partners; e.g., county commissioners and Extension committees	o Regular review of programs at County Extension meetings. o One-on-one meetings with commissioners. o Attendance of local partners at program showcases, Extension gatherings, etc.	Regional Extension Directors Liaison to the Association of Minnesota Counties	MOUs which align local positions to priorities. Written summary of County Extension Committee meetings. Local needs assessments
Association of Minnesota Counties Extension Committee	o Meets four times a year o Liaison to AMC monitors feedback from Committee	AMC Liaison Dean and Director	Minutes from meetings four times a year
Current program participants	o Participant satisfaction surveys o Repeat interest in Extension programs	Regional educators and program leaders	Program business plans include information about participation and program adjustments
Targeted program audiences and constituents	o Getting acquainted meetings o Surveys and feedback forms at program showcase events o Market Surveys	Regional Educators, Campus Specialists and Regional Directors	- Program outreach materials and strategies that address key concerns of the target audience. - Program business plans that incorporate feedback into an outreach plan.
Regional Educators and Campus staff	o Regular program meetings that design research-based programs	Area Program Leaders, Capacity Area Leaders; Associate Dean and Director	Program Business Plans Individual Work Plans
Legislators and Higher Ed Committee and Senate Agriculture & Veterans Budget and Policy Division	o Personal Meetings and Committee Presentations	Dean and Director; Associate Dean for External Relations	Updates in Extension Weekly
Council for Agricultural Research, Extension and Teaching (CARET	o Ongoing Communications o Attendance at yearly CARET meeting o Regular distribution of names and reports	Dean and Director	CARET delegate discussion with federal legislatures

C. Statement of how the collected input was considered.

Input from stakeholders guides program teams and capacity areas as they design program business plans that address stakeholder priorities. Stakeholder input is considered as we answer questions such as:

- Where will staff be placed?
- Which stakeholders should regional educators work with as they conduct programming? Who is interested in their work?
- What fees will be charged, for which services, at what price points?
- How should research-based education be delivered? (Long-term consultation, workshop format, on-line course, assessment, one-on-one consultation, mass media, web site, etc.)
- What other resources do stakeholders turn to? Do these intermediaries need research-based information? Are we duplicating a service? What is our program niche?
- What do stakeholders know about Extension programs? How do they hear about our services?
- Has our past service and research been satisfactory? How might it be changed?
- What new research should shift how we deliver programs?
- What current issues are Minnesotans concerned about? Should Extension seek additional funds to create initiatives to address those concerns?

D. Statement regarding the usefulness of the stakeholder input process in refocusing and reaffirming priorities or in identifying emerging issues.

As Extension has established program specialization, regional centers, and county purchase of service, stakeholder input is more integrated into our organizational response. The extent to which programs continue, grow and evolve relies upon the satisfaction, positive feedback and investment from stakeholders.

Each program business plan and capacity area work plan includes input from external scans, stakeholder input and secondary data that feed the strategic planning process. It will directly influence the use of resources and the direction of these programs.

III. Program Review Process Update

A. What is our process?

The University of Minnesota defines and refines its program review process to support priorities in each of the five capacity areas: (1) Agriculture, Food and Environment; (2) Community Vitality; (3) Family Development; (4) Natural Resources and Environment and (5) 4H and Youth Development. Yearly reviews of program status are done by program teams which consist of educators and campus specialists. From these reviews, program business plans are developed and requests for program improvement funds are made. The program business plans and the request for funding are reviewed by Capacity Area Leaders and the Associate Dean and Director of Programs.

The review of business plans and program fund application include investment in needed improvements and discontinuation of programs that are not strong or growing stronger regarding program outcomes and sustainability.

Two additions were made to this process in 2005 and 2006. Because of the new organizational structure, Extension was better able to organize its request for internal funding to create initiatives

to address issues about which Minnesotans are concerned. This has resulted in ongoing funding increases from the University in the amount of $1.8 million/year.

Some of this funding will help us to better conduct program review. Evaluation directors were hired in 2006 to manage quality evaluation processes in each capacity area.

B. Have there been significant changes in it during 2005-2006?

There have been no significant changes, just advancement toward our goal of "being the best in the business" through improved investment in evaluation, improved quality in outreach to underserved stakeholders, and continuing examination of program and business plans.

In addition, working toward the goal of developing a 2007 – 2011 plan of work caused us to outline specific plans of work for each area of expertise.

IV. Evaluation of the Success of Multi-state and Joint Activities

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

Stakeholder input processes developed implemented during this plan of work connected program teams to target audiences so that programming will stay responsive to their needs. In addition, stakeholder input processes assured that programs addressed critical issues of strategic importance; that they were not duplicating existing services and that used research-based information. New investments from counties, external income increases, and increased investment from the university all point to stakeholder satisfaction with programming.

In 2006, program business plans were updated to respond to process program evaluations and customer feedback. Staffing plans at the county and regional level were adjusted, sometimes increasing staffing to accommodate demand in particular regions of the state. Special initiatives targeted the efforts of program team at issues of concern to Minnesotans, including drought and services for military families.

As program teams have targeted their work to specific issues and customers, they have increased the investment of these audiences in receiving programs, assuring that the programs are of significant demand to warrant attention. External sales and grants made up nearly 18% of the total budget in 2006, up from only 12% in 2000.

B. Did the planned programs address the needs of underserved and underrepresented populations in Minnesota?

Progress toward diversity task force recommendations, 2006:
During the winter of 2004, the dean and director appointed a task force to examine the status of diversity and inclusion efforts within the Extension organization. The full report was presented in May of 2005. Nineteen recommendations were made in the areas of:
1) Access and Representation

2) Climate and Environment
3) Programs and Products and
4) Special Initiatives

In 2006, we were able to document progress. **As recommendations are carried out, Extension is seeing an impact. We can report five types of progress for 2006 and will continue to report on impacts from our increased investment.**

Programs and Products
Eight of our fourteen federal programs have adapted programming to target diverse and historically underserved audiences. See the chart below to learn about the growing numbers of program adaptations our teams have developed.

Table 14: Programs and Products Targeting Underserved Minnesotans, University of Minnesota Extension, 2006

Targeting Underserved Minnesotans	
Program	**Description**
Environmental Science Education	*Woodlands Wisdom* is collaboration between Tribal Colleges and the University of Minnesota. The goal of Woodlands Wisdom is to integrate traditional Native knowledge with Western methodologies to support sustained healing processes of American Indian communities. *The White Earth Summer Math and Science program* connects American Indian youth to the cultural traditions and the natural resources of the White Earth Reservation while improving academic performance in math and science. Elders, tribal leaders, Extension and Reservation natural resource managers deliver a six-week summer program that builds upon the foundations of Ojibwe tradition.
Financial Literacy **30.2% of Extension's Financial Literacy Programming reached persons of color in 2006.**	*Dollar Works en Espanol* is a series of ten modules that teach newly employed people to take control of personal or family finances. Module topics include: How to Make Choices About Money; How to Teach Kids About Cash; How to Make a Spending and Savings Plan; How to Use Credit Wisely and How to Get Out of Debt. Outreach assures that this program is delivered by human service workers and welfare counselors who work with Spanish-speaking audiences. *The Learning the Language of Money team,* the Minnesota Department of Employment and Economic Development, Hmong, Latino, and Somali leaders, banks, and Extension educators, developed a web-based guidebook, fact sheets and a CD to teach financial workers about cultural money systems and to help them help immigrant clients understand the U.S. money system – thereby helping them become part of their new communities.
Parenting Education **18% of all parent education activities in 2005 reached non-white populations.**	The Parents Forever program addresses parent conflict and decision-making in times of divorce. Padres Para Siempre is a program that translates the program both culturally and linguistically to meet the needs of Minnesota's growing Latino culture.

Info-U in Hmong, Spanish and Somali **Over 1,500 calls and 2.29 million web hits were for Info-U resources other than English.**	Our Info-U answer lines and web links are translated into Hmong, Spanish and Somali – especially targeted at the most frequent needs of these populations.
Agricultural Safety and Preparedness **Educational conferences on Ag Safety are running parallel tracks for Hmong farmers.**	A project funded by the USDA deals with safety and preparedness for those who grow and sell products for Minnesota's farmer's markets. In 2006, grower's meetings managed parallel tracks in Hmong for 80 growers. Topics included food safety, emergencies at farmer's markets and worker safety. *Orphan Boy the Farmer*, a publication funded by the CDC to deliver information about injury prevention in culturally appropriate ways, is being widely distributed.
Master Gardener Program **The Master Gardener team is implementing a strategic plan to make Master Gardener more diverse.**	A strategic plan adopted in 2005 by the Master Gardener Diversity Subcommittee had three goals: 1) to increase the cultural competency of Master Gardeners; 2) to provide equal access to services and info for all cultures; and 3) to diversify Master Gardener membership. In 2006, progress was made. The statewide conference for Master Gardeners focused on diversity. A website shares resources that can help locals contributed to the progress of the goals. Ideas for diverse gardening events are shared through various communication methods.
Food Safety **As a result of adaptations, Spanish-speaking food service worker certification moved from 40 – 90%.**	Based on assessed barriers between the certification process and Spanish-speaking food service workers, the ServSafe Spanish program was re-designed for cultural appropriateness. The new course consisted of four 2.5 hour sessions with more hand-s-on learning content. Certification test results improved dramatically.
Leadership and Civic Engagement **Poverty reduction programs are now available to the 124 communities with 500 – 5000 people and poverty rates > 10%.**	The Horizons program, funded by the Northwest Area Foundation, has found a home in the Community Vitality capacity area of Extension. These programs reach deep into communities to build the leadership skills of those living in the margins. The program will also turn the head of existing leaders to address issues that create or exacerbate poverty. In 2006, we reached out to every one of the 124 communities in this population. Twelve are receiving in-depth programming in 2006-07. Other communities are being put on a waiting list for future service.
Youth Development **30% of 4-H Adventure Activities participants are youth of color.**	Over the past two decades, Minnesota 4-H, like other youth organizations, experienced a steady decline in membership. In 2004, Minnesota 4-H made a commitment to increase participation in 4-H clubs through a *Grow Green* campaign. One component is the availability of non-club activities called *Adventures.* Since then, 4-H Club membership has grown by about 5% each year! Non-traditional activities have grown the number of youth of color reached. While 10% of 4-H club participants are youth of color, 30% of Adventures participants are youth of color. Adventure participants are being recruited to become part of 4-H clubs.

New Data Tracking Methods Support Program Diversity Benchmarks: As we reported in last year, U of MN Extension is implementing new data tracking procedures. These new procedures will have a significant impact on the quality of data collection regarding non-white participants. Already, we see drops in numbers as estimates became actual accounting.

Table 15: Capacity Area Service to Persons of Color, 2005-2006

Capacity Area	% of Total of Known Respondents who were persons of color, 2005	% of Total Known Respondents who were persons of color 2006
Agriculture, Food and Environment	2.5%	4%
Natural Resources and Environment	3.2%	1.5%
Community Vitality	3%	5.8%
Family Development	18%	23%
FSNEP	45%	
FNEP	30%	32%
Youth Development	17%	20%

Access and Representation

Positive trends in professional and academic diversity employment:

In 2003, Extension developed new policies to make employment searches more fair, equitable and consistent with new organizational realities under the change plan taking place at the time. In the Professional and Academic category, rates of diverse employment moved from 3.2 – 3.7%.

Climate and Environment

Inventories of intercultural competence:

Extension has made extensive use of the Intercultural Development Inventory (IDI), a valid and reliable instrument that assesses individual and organizational developmental orientation towards cultural difference. In 2006, benchmark data was assessed for three of our five capacity areas, as well as Extension's leadership team. More than a dozen key personnel have become been trained in the concepts of Intercultural Development and have become certified IDI administrators.

Special Initiatives

Summer Internship Program Begun: A 4-H Summer Interns of Color Initiative provided Extension experiences to three interns of color in 2006. This initiative will continue in 2007.

C. Did the planned programs describe the expected outcomes and impacts?

Programs are in varying stages regarding demonstration of outcomes and impacts. In 2005, program dollars were tied to evaluation planning and Extension's annual conference featured workshops about quality evaluation strategies and evaluation success stories within Extension. In 2005-06, 78% percent of programs are developing in-depth evaluations.

In addition, the on-line program tracking tool being developed will provide a place for all program teams to report knowledge, skills and attitude changes post-event, as well as impact statements uncovered over time.

D. Was research integrated into the Extension activities?

As noted in the Executive Summary, the integration of research and Extension is a key element to helping the University of Minnesota Extension accomplish its goal to become "the best in the business" related to outreach and Extension programming. The 140 regional educators working in centers are highly specialized in their area of expertise, and are directly tied to campus staff that support connections to research. Capacity areas commit their staff development and professional development funds on improving their connection to new research and quality improvements for their program work. Partnerships with five colleges fund 118 faculty members and forge a strong link between research and outreach.

Recruitment and hiring is also improving the degree of specialization and research connection. All new educators hired in 2005 have M.S. or Ph.D. degrees in their area of specialization. Since 2005, nine of nineteen regional Extension Educators hired had PhD's.

V. Multi-state Extension Activities (See Form CSREES-REPT 2/00)

In tracking multi-state activities program by program, it is clear that Extension programs value relationships with other states. Last year, of the 14 federal programs in the 2004-06 plan of work, 12 (86%) identified cooperative relationships with Minnesota's bordering states of Iowa, Wisconsin, North Dakota and South Dakota, serving each others' residents and developing or distributing educational materials, and 100%% of programs reported multi-state activities of any kind, including program cooperation described above, as well as shared curriculum and training opportunities, joint conferences and joint research. These efforts are both documented and non-documented.

At the agency level, Extension utilizes multi-state relationships through participation in the Northeast Leadership Development Program, NASULG activities and purchase of phone answering services from the University of Iowa Extension Service. These relationships are all documented and auditable and, thus, are represented in our multi-state budget description.

VI. Integrated Research and Extension Activities (See Form CSREES REPT 2/00)

As of 2006, all research and Extension activities are articulated and documented for 97% of our programs due to the development of program business plans. Other examples of progress in integrating research and Extension activities are described in the Executive Summary and in the Program Review Process section of this report. Our integrated budget outlines expenditures for programs that are integrated through Hatch funded research projects. All other programs use other funding and collaborations to integrate research into programming.

University of Minnesota Extension
2005 - 2006 Federal Accomplishments and Results Report Financial Data
Sources of Funding and Staff Time Used

GOALS AND PROGRAMS	Reported Themes	Smith Lever	State	County	Grants & Income	Hatch	Total	Staff FTE
GOAL 1 Program 1 Farming for Tomorrow	*Ag Profitability Ag Competitiveness*	$585,411	$1,088,422	$968,783	$239,277			38.85
Program 2 Bountiful Horticulture	*Ag profitability Ornamental/ Green Ag*	138,754	354,253	446,288	22,161			13
Total Goal 1		**$724,165**	**$1,442,675**	**$1,415,071**	**$261,438**	**$404,269**	**$4,247,618**	51.85
GOAL 2 **Total Goal 2**	*Food Safety*	**$206,236**	**$366,844**	**$339,924**	**$323,862**	**$9,033**	**$1,245,899**	15.6
GOAL 3 **Total Goal 3**	*Human Health*		**$310,159**	**$48,155**	**$6,147,613**	**$54,835**	**$6,560,762**	**101.4**
GOAL 4 Program 1 Env. Safety & Mgmt	*Air Quality Agricultural Waste Management*		$17,789	$52,439				2.2
Program 2 Natural Res. Mgmt & Util	*Forest Management*	$145,078	278,335		$64,043			7.4
Program 3 Environmental Science Ed		63,244	144,685		36,780			3.7
Program 4 Water Res. Mgmt & Policy	*Water Quality*	148,900	386,631	157,317	35,495			8.6
Total Goal 4		**$357,222**	**$827,440**	**$597,835**	**$136,318**	**$130,018**	**$2,048,833**	**21.9**
GOAL 5 Program 1 Ag Workplace Safety/Health	*Farm Safety*	30,822	57,285	50,989				2.15
Program 2 Youth Dev/4H	*4-H / Youth Development*	972,207	2,608,117	4,649,337	2,173,257			138.5
Program 3 Community Economics	*Tourism Impact of Change on rural Communities*	150,320	623,810	40,870	280,852			6.6
Program 4 Leadership & Civic Engagement	*Leadership Training and Development*	261,887	616,520	40,870	146,293			10.9
Program 5 Family Resce Mgmt		239,952	688,748	48,155				12.1
Program 6 Parent Ed		422,175	-0-	48,155	52,043			6.4
Total Goal 5		**$2,077,363**	**$4,594,480**	**$4,878,376**	**$2,652,445**	**$12,250**	**$14,214,914**	**176.65**
Grand Total		**$3,364,986**	**$7,541,598**	**$7,279,361**	**$9,521,676**	**$610,405**	**$28,318,026**	**367.4**

Faculty with Joint Appointments (Research/Extension)

Fiscal Year: ***2006***

College / Department	Research	Extension	Teaching	Total
AGRICULTURAL,FOOD,ENVIRONMENTAL SCIENCES				
NWROC - CROOKSTON				
Hollingsworth,Charla R	70.00	30.00	0.00	100
Macrae,Ian Vance	54.00	46.00	0.00	100
WCROC - MORRIS				
Johnston,Lee Jay	80.00	20.00	0.00	100
Rudstrom,Margaretha V	67.00	33.00	0.00	100
NCROC - GRAND RAPIDS				
Lamb,Graham Clifford	77.00	23.00	0.00	100
SROC - WASECA				
Fritz,Vincent A	70.00	30.00	0.00	100
Baidoo,Samuel Kofi	80.00	20.00	0.00	100
Zhu,Jun	80.00	20.00	0.00	100
BIOSYSTEMS AND AGRICULTURAL ENGINEERING				
Jacobson,Larry Dean	25.00	75.00	0.00	100
Shutske,John M	25.00	75.00	0.00	100
Wilcke,William F	50.00	50.00	0.00	100
Sands,Gary Robert	35.00	65.00	0.00	100
AGRONOMY AND PLANT GENETICS				
Hicks,Dale Ray	8.00	92.00	0.00	100
Naeve, Seth L.	25.00	75.00	0.00	100
Gunsolus, Jeffrey L.	28.00	72.00	0.00	100
Becker,Roger Lee	25.00	75.00	0.00	100
Peterson,Paul Richard	25.00	75.00	0.00	100
APPLIED ECONOMICS				
Lazarus,William Frankl	35.00	65.00	0.00	100
Kalambokidis,Laura TJachim	32.00	58.00	10.00	100
Stinson,Thomas F	46.00	44.00	10.00	100
Hurley,Terrance Michae	40.00	30.00	30.00	100
Fruin,Jeremiah E	50.00	50.00	0.00	100
Parliament,Claudia	13.00	50.00	37.00	100
Olson,Kent D	33.00	37.00	30.00	100
Taff,Steven James	50.00	50.00	0.00	100
ANIMAL SCIENCE				

Endres,Marcia Ines	25.00	75.00	0.00	100
Linn,James Gary	15.00	75.00	10.00	100
Noll,Sally	15.00	75.00	10.00	100
Shurson,Gerald C	5.00	30.00	65.00	100
DiCostanzo,Alfredo	19.00	71.00	10.00	100
ENTOMOLOGY				
Ragsdale,David Willard	64.00	10.00	26.00	100
Krischik,Vera	35.00	65.00	0.00	100
Spivak,Marla S	59.00	13.00	28.00	100
Kells, Stephen A	40.00	60.00	0.00	100
Hutchison,William Dale	66.00	34.00	0.00	100
Ostlie,Kenneth R	40.00	60.00	0.00	100
COAFES - FOOD SCIENCE AND NUTRITION				
Feirtag,Joellen	3.00	94.00	3.00	100
HORTICULTURAL SCIENCE				
Hoover,Emily Esther	17.00	24.00	59.00	100
Erwin,John E	70.00	30.00	0.00	100
Meyer,Mary H	15.00	85.00	0.00	100
Tong,Cindy Bow San	50.00	50.00	0.00	100
Horgan, Brain P	40.00	60.00	0.00	100

College / Department	Research	Extension	Teaching	Total
SOIL, WATER, & CLIMATE				
Moncrief, John	40.00	60.00	0.00	100
Seeley,Mark W	21.00	79.00	0.00	100
Rehm, George	18.00	79.00	3.00	100
Anderson,James L	1.00	88.00	11.00	100
Rosen,Carl Jay	24.00	57.00	19.00	100
Lamb, John	55.00	20.00	25.00	100
COLLEGE OF HUMAN ECOLOGY				
FAMILY SOCIAL SCIENCE				
Bauer,Jean W	20.00	59.00	21.00	100
Danes,Sharon M	30.00	70.00	0.00	100
Stum,Marlene Sue	40.00	60.00	0.00	100
DESIGN, HOUSING, & APPAREL				
Bruin,Marilyn J	30.00	60.00	10.00	100
Yust, Becky L	10.00	10.00	80.00	100
CHE - FOOD SCIENCE AND NUTRITION				
Reicks,Marla M	22.00	69.00	8.00	99

Hassel,Craig Alan	26.00	63.00	11.00	100
SOCIAL WORK				
Quam,Jean Kathleen	25.00	7.00	68.00	100
COLLEGE OF NATURAL RESOURCES				
FISHERIES AND WILDLIFE				
Blair,Robert B.	10.00	64.00	26.00	100
Oberhauser,Karen S	5.00	36.00	58.00	99
FOREST RESOURCES				
SCHNEIDER, INGRID	38.00	50.00	12.00	100
BAUGHMAN, MELVIN J	9.00	91.00	0.00	100
BLINN, CHARLES R	23.00	70.00	7.00	100

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

Fiscal Year: 2006

Select One: **□ Interim X Final**

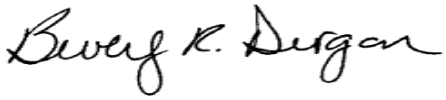
Institution: University of Minnesota Extension

State: Minnesota

	Integrated Activities (Hatch)		Multistate Extension Activities (Smith-Lever)		Integrated Activities (Smith-Lever)	
Established Target %		**%**	1%	**%**	10%	**%**
This FY Allocation (from 1088)	$ -		$8,767,057		$8,767,057	
This FY Target Amount	$ -		$ 87,670.57		$ 876,705.70	
Title of Planned Program Activity						
Goal 1 Pgm 1 Farming for Tomorrow	$ -		$ -		$616,233	
Goal 1 Pgm 2 Bountiful Horticulture					$138,754	
Goal 2 Food Safety					$206,236	
Goal 1 NDSU Sugarbeet Contract			$134,572			
Goal 1-5 Iowa Answer Line Contract			$61,900			
Total	$ -		$ 196,472.00		$ 961,223.00	
Carryover	$ -		$ -		$ -	

Certification: I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays represented here accurately reflect allowable expenditures

of Federal funds only in satisfying AREERA requirements.



March 28, 2007
Date

Director

Summary of Integrated Targets: Goals 1 and 2 are implemented through the efforts of program teams that combine researchers and Extension program leaders and educators.

Summary of Multistate Targets: While many other multi-state efforts exist (see report), two contracts constitute an auditable implementation of multi-state efforts that address UMN's established target.