2007 University of Minnesota Combined Research and Extension Annual Report

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I. Report Overview

1. Executive Summary

This report highlights the accomplishments of the University of Minnesota's Agricultural Experiment Station and Extension. •The work is organized under the 17 program areas of Extension. •Experiment Station research impacts are reported under the Extension program areas outcome goals that the research supported and informed.

MAES received one-time only additional Federal Funding from CSREES for fiscal year 2007 as a result of a continuing resolution that disbanded all "earmark" funded projects nationwide.Some of the money was used to support Minnesota research projects that lost their funding through that continuing resolution.Another portion was dedicated to research infrastructure support.The impacts from research that resulted from that additional funding are described under those same program area categories.

In producing this, Minnesota'sfirst joint Experiment Station and Extension report, we have learned much that will inform additions and modifications to our Plan of Work.Sorting Experiment Station projects under Extension program areas allows for clearer illustration of how research informs Extension programming in major issue areas.However it has not provided the space for a few areas of research that concern non-Extension related stakeholders, or emerging research issues that are not yet outreach program priorities.In some cases, the impacts from examples of this kind of work in 2007 was added as new outcomes.In subsequent years, it may be reported under a few additional planned programs to be added to our Plan of Work.

University of Minnesota (UMN) Enrollment Measures

a.Demand:There was significant demand for Extension resources in 2007.As a result:

•UMN Extension served 669,575 Minnesotans.This includes federal programs described here, as well as nutrition education outreach, farmer-lender mediation programs, and county-based technical assistance supporting all programs. •There were 5,629,105 visitors to UMN Extension's web site.These visitors viewed 39,330,793 page views.Google's criterion places UMN Extension's web site first with a search for "Extension Service". •Extension handled 26,275 phone calls through phone answering services. b.Outreach to Underserved Populations

•Ethnic Minnesotans are 12.8% of Minnesota's population.Five planned programs exceeded that percentage in their service numbers through targeted outreach.They include:Family Resource Management programs (39%); Nutrition Education Programs (31%); Community Youth Development (25%); 4HPrograms (23% of club members) and Environmental Science Education (18%).Other programs also achieved strong participation by underserved audiences:Food Safety (9.2%); Family Development (7.7%); and Leadership and Civic Engagement (7%). Multi-state Engagement

•Every planned program reported formal or informal involvements with other states. •UMN Extension's Distribution Center delivered UMN Extension materials to fifty states, Puerto Rico, Washington DC, seven Canadian provinces and six continents.

•A contract with the Iowa State Extension provides cost-effective phone services to Minnesotans.In 2007, Iowa supported service to 5,533 Minnesotans. Other Performance Measures, including Integrated Service:Integrated research and Extension programs and projects are helping Minnesota achieve its goal to be "the best in the business".

a.Quality and Centrality to Mission

•Six of the 17 Planned Programs report an impact on conditions through Extension programming. Ten more reported changes in action by program participants.

•All programs are demonstrating a research connection through program business plans. •130 highly specialized Extension educators are at work in Minnesota.37 specialized educators and 208 program coordinators and educational assistants work in county offices. •Partnerships with four colleges fund thirteen 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 81% in 2007. b.Development and leveraging of resources

•Budgets for county educator and coordinator positions increased by an average of 3.9% statewide in 2007. •Grants to Extension increased by 21% from 2006-2007. Income increased by 21% from 2006 - 2007. •Extension programs with a mission of mobilizing volunteers included the Master Gardener, Master Naturalist, 4H programs as well as weather monitoring programs.These programs mobilized 39,134 volunteers and leveraged 1,623,929 hours.

Total Actual Amount of professional FTEs/SYs for this State

Year:2007	Extension		Research	
	1862	1890	1862	1890
Plan	336.3	0.0	536.1	0.0
Actual	326.2	0.0	552.4	0.0

II. Merit Review Process

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

- Internal University Panel
- External University Panel
- External Non-University Panel
- Combined External and Internal University Panel
- Combined External and Internal University External Non-University Panel
- Expert Peer Review

2. Brief Explanation

The MAES merit review process is managed through collegiate partners that receive MAES funding.This includes the Colleges of Food, Agricultural and Natural Resource Sciences, Veterinary Medicine, Education and Human Development, Biological Sciences, and the College of Design.The deans and associate deans for research of these colleges are members of the Experiment Station Executive Council.

•The merit review process is governed by University standards.Within those standards, MAES partner colleges establish their own research peer review process managed by department heads and reviewed for approval by the associate deans for research. •MAES submits a compact outlining its strategic goals, which is approved by University administration.

In 2007, the University of Minnesota Extension:

•Submitted a compact which reported to University of Minnesota administration its outreach goals, strategies and interests.

•Launched a promotion and review process for all of its faculty and educators which aligns Extension more closely to the University in promoting quality scholarship, research and outreach.This process includes a peer review process and ties performance to academic rank.The review is based upon six criteria:

-Program Leadership

-Extension Teaching

-Scholarship

-Engagement

-Program Management

-Service

III. Stakeholder Input

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

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

Brief Explanation

In 2007, MAES made significant progress in organizing and receiving stakeholder input to develop a new strategic plan for agricultural research, Extension and education.The new structure now developed is a public/private partnership consisting of deans of university units involved in agricultural research, Extension and education, and the leaders of 22 agriculture organizations.During the past year, the deans and farm leaders held six meetings to discuss issues and build a working relationship.The first stage of the strategic plan on animal agriculture has now been completed.

In addition, colleges that receive Experiment Station funding all have advisory committees with stakeholder representation to give input into research priorities.For example, in the College of Education and Human Development, which receives Experiment Station funding for family development and family resource management research, individual departments and centers hold annual or biannual meetings with advisory boards consisting of community members, leaders of related organizations, and alumni.

The Rapid Agricultural Response Fund, administered by MAES, requires a stakeholder input process, both in the development of research proposals and in the review and funding decision-making process.

In 2007, three Extension work groups actively sought feedback from key audiences and statewide stakeholders.

1)Program teams generated direct conversations and systemic feedback from target audiences to improve program plans.

2)Regional Directors managed conversations with county boards and regional government, and measured success by increased investment in Extension programs from those stakeholders. They also coordinated local responses to disaster.

3) The Dean's office actively managed the Extension Citizen Advisory Committee, relationships with state associations, the Minnesota State legislature and its Higher Ed committee, University of Minnesota Relations, and the Council for Agricultural Research, Extension and Teaching.

Monitoring systems are in place to monitor the performance of these three work groups: e.g., program business plan review, tracking of investments, and individual performance reviews. Engagement is one of six criteria instituted within Extension's new scholarship and promotion policy.

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

1. Method to identify individuals and groups

- Use Advisory Committees
- Use Internal Focus Groups
- Use External Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Surveys

Brief Explanation

Within MAES:

- The MAES Executive Council establishes broad guidelines for stakeholder input, and takes the lead to plan and implement connections to major stakeholder groups such as governmental relations and commodity groups.
- Associate Deans for Research lead college-wide stakeholder identification processes.
- Department Heads and Research and Outreach Center Heads are responsible for identifying individual and groups for input into their research areas.
- Individual scientists are responsible for identifying stakeholders relevant to their research projects.

In addition, there are other formal processes in place for stakeholder identification, including requirements of stakeholder input into Rapid Agricultural Research funding, Small Grains Initiative funding, and research-related committees that bring stakeholders to the table, such as the Agronomic and Horticultural Variety Review Committees.

Within Extension:

1)Program teams with specialized program areas implemented plans to target individuals and groups, and updates those program business plans regularly.Each area of expertise targets audiences who are in the best position to help create program impacts.Small grants, staff evaluation and staff development events throughout the system encourage each program group to reach underserved audiences.

2)Regional directors target county boards, and assess progress through tracking the investment of individual counties in Extension programming.

3)The dean, associate deans and government relations staff scan statewide stakeholders, examine current issues and concerns and identify new opportunities for partnerships to grow Extension's mission.The dean and directors' staffs meet with associations of local government, manage Extension committees, and educate state legislators.A dean's designee was appointed to be the liaison to the University of Minnesota's Public Engagement initiatives.

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

1. Methods for collecting Stakeholder Input

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

Brief Explanation

1)A year-end examination of methods used by Extension program teams showed that a variety of methods are used to reach those audiences, including one-on-one conversations, surveys,development of advisory committees, on-site evaluations, focus groups, listening sessions, focus groups and meetings with partner organizations.

2)Extension Regional directors monitor local needs through regular conversations with elected officials, administrators and community groups that need or receive Extension programming.Investments in Extension are tracked, and especially in time of decreasing local government dollars, illustrate program relevance. In 2007, 91% of Minnesota's 87 counties increased their investment in Extension, and all 87 counties have continued to partner to bring locally relevant programs to their area.

The county investment in Extension has grown yearly since 2006. In 2006, budgets increased 6.4%.In 2007, budgets increased 4.9% and the 2008 budget showed an increase of 5.2%.The number of FTEs contracted by counties has increased from 115.85 positions in 2005 to 123.32 in 2008.

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3)The dean, associate deans and government relations office use meetings, conference calls, liaison relationships, committee presentations and one-on-one meetings to describe and promote Extension's current programs, to determine if changes in funding are needed, and to consider new program direction.

3. A statement of how the input was considered

- In the Budget Process
- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Staff Hiring Process
- In the Action Plans
- To Set Priorities

Brief Explanation

MAES research is informed in several ways by stakeholder input.In some cases, stakeholders set the direction of the research, or give feedback on the relative importance of the research focus compared to other similar areas of research focus.For example:

•At the end of January, 2007, a meeting was held at the Minnesota Department of Agriculture with representatives of the major commodity and agricultural industry associations to discuss agricultural research priorities.As a result, a research project was developed to address the issue of bacteria TMDLs in southeastern Minnesota:"Development of a DNA Marker Gene System for E. Coli from Cows, Pigs, and Turkeys and Using Small Watersheds to Monitor Bacteria Loadings and Effects of Mitigation Practices." •A panel consisting of commodity group members reviewed research proposals for 2007 Rapid Agricultural Response funding and as a result of their recommendations a group of research projects focusing on specific animal health and crop issues were funded.

Within Extension:

1)End of year collection of program activities showed that program teams most frequently use stakeholder feedback to modify programs and curricula design, to manage programs more effectively, to change marketing and outreach strategies, to target programming at urgent and emerging needs, and to allocate resources differently.

2)Regional Directors engage Extension educators in regular meetings with local needs, and provide feedback to capacity areas about the investments most viable and relevant to county boards.As a result, investments by counties in Extension staff are increasing

In 2007, director's activities stimulated comprehensive local responses to disaster -- including drought, flood and the mortgage crisis.The Minnesota arm of the national Extension Disaster Education Network (EDEN) activated a "website in waiting" to respond to questions related to drought and flood.

3)Partnerships convened by the Dean and Director's Office in 2007 were used to choose new project initiatives.For example, Extension organized program and research resources to respond to bio-fuels and other emerging interests among legislatures, higher ed, and national research initiatives.Partnerships across the University are mobilizing research and outreach activities in urban Minneapolis.The American Indian Task Force is mobilizing Extension programming to work within Minnesota's reservation communities.

Brief Explanation of what you learned from your Stakeholders

Some examples of stakeholder feedback to inform MAES research:

•With growing input costs, commodity crop farmers want continued support on efficient methods of conventional farming. •The public is increasingly interested in locally produced foods and high quality foods. •Family social science professionals want more research on the impact of new immigrant families on social services. •The potential of biomass and biofuels are of increasing interest to a variety of groups. •A small but growing horticultural stakeholder group want information on MAES developed varieties such as wine grapes for potential business opportunities.

Extension's program team activities learned what specific content, management and resource changes need to be made to maintain program viability.Regional Directors learned about specific county needs and interests, and tied local investment to Extension program resources and special initiatives.The Dean and Director's office learned how Extension's unique resources could more effectively be leveraged through partnerships with University and State investments.All three stakeholder assessment agents engaged in conversations and initiatives with diverse communities to stimulate new cultural relevance within Extension programming.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
8188933	0	8681329	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	3584773	0	4564596	0
Actual Matching	6189206	0	34615840	0
Actual All Other	16586325	0	31066554	0
Total Actual Expended	26360304	0	70246990	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous years				
Carryover	0	0	48151	0

V. Planned Program Table of Content

Program #1

V(A). Planned Program (Summary)

1. Name of the Planned Program

4-H Programs in Minnesota

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
805	Community Institutions, Health, and Social Services	20%		0%	
806	Youth Development	80%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	44.1	0.0	0.0	0.0
Actual	44.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
832747	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1618855	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
6818864	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Recent research, reported previously to CSREES, has demonstrated the value of 4-H in the development of youth.4-Hers are more likely to volunteer, to be involved in sports activities and to be involved in arts activities.They are less likely to spend more than six hours a week watching television or video games, less likely to steal, damage property, smoke, drink or ride in a car with someone who's been drinking.

With this information, UMN Extension has established goals to create greater access to these program outcomes, so that more groups of Minnesota youth can benefit.The team is also seeking to assure consistent quality across the state.

In 2007, UMN Extension organized its staff development and outreach events to address access and quality.Grow Green is an ongoing initiative to introduce new populations to 4-H in "Adventure" activities that engages youth so that they are more likely to link to long-term 4-H club membership. (Research has shown that eighteen months of programming is needed to assure an impact on youth development.)Staff is working to value and accept culturally appropriate programs, accepting differences in the model to reach diverse populations.Minnesota 4-H is implementing 4-H's national mission mandate by developing at least one science, engineering and technology, one Healthy Lifestyle and one Citizenship and Leadership focused group in each county.

2. Brief description of the target audience

The target market for 4-H clubs is youth, though adult club leaders are also provided training to assure quality control.The numbers of youth enrolled in clubs has grown from 27,096 in 2002 to 31,710.Part of that growth has come from outreach to diverse audiences.The team is charting its progress in reaching diverse youth.

24432.21.032332.93.381547.24.1229.2.194508.42.98778177.788.119651.71.4Race and Ethnicity of 4H Youth in Minnesota
RaceTotal Youth% of 4H Membership% of MN PopulationAmerican IndianAsianBlack or African-AmericanNative Hawaiin/other Pacific IslanderHispanic or LatinoWhiteMore than one race

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	4500	159000	10
2007	13500	6877	113000	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- The number of underserved youth participating in 4-H program activities will increase yearly. (Target expressed as a percentage of youth involved in programs from groups targeted as "underserved.")

Year	Target	Actual
2007	10	35

Output #2

Output Measure

- Participants will be satisfied with the out-of-school activities delivered through the 4-H program. (Target expressed as percentage of those who are satisfied.)

Year	Target	Actual
2007	95	90

Output #3

Output Measure

- Well-trained adult volunteers will work with Minnesota's young people. (Target expressed as percentage of volunteered trained in effective practices for working with 4-H youth.)

Year	Target	Actual
2007	75	74

Output #4

Output Measure

- Learning settings (or point of service) in 4-H will meet the essential elements that promote positive youth development. (Target expressed as scores out of 20 items on the 4-H Youth Program Survey.)

Year	Target	Actual
2007	16	15

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Youth involved in 4-H programs will experience positive outcomes (compared to another statewide sample) in keys of positive youth development including life skills, connection to peers, family, school and community, and engagement in pro-social and risk behaviors.

Outcome #1

1. Outcome Measures

Youth involved in 4-H programs will experience positive outcomes (compared to another statewide sample) in keys of positive youth development including life skills, connection to peers, family, school and community, and engagement in pro-social and risk behaviors.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Positive youth development is a way of measuring development during adolescence from a positive standpoint. Rather than looking at negative measures to assess how youth fare (such as teenage pregnancy or delinquency), positive youth development focuses on five developmental assets used to measure youths' contribution to their communities.

What has been done

Each of the five Cs -- confidence, competence, character, connection and caring -- is comprised of multiple survey items and subscales that have been tested by researchers and found to be reliable measures of concepts. The items were validated using data from the first two waves of the national sample of 4-H youth. In 2007, we were able to uncover findings collected about Minnesota youth, in which 362 Minnesota youth participated.

Results

CONFIDENCE is measured by two subscales, positive identity and self-worth. Each is comprised of six questions. On a 100 point scale, the average confidence score for Minnesota youth is 74.89.
COMPETENCE measures academic, social, and physical competence as well as astudents' grades in school. Overall, the average score for Minnesota youth score is 70.72.
CHARACTER is a measure of diversity, personal values, social consciousness and behavior. The average score for Minnesota youth is 75.08.
CONNECTION asks about connection to peers, family, school and community. The average score for Minnesota youth is 73.5.

4-H youth who participated in the study show evidence of active involvement, contribution and leadership. These youth are active in a variety of additional activities, in addition to 4-H: 53% in weekly community programs and 21% in monthly programs. Participants are also often leaders -- 79% say they have been a leader in a group or organization in the past year, and 93% are likely to help others in their community.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

4-H programming in Minnesota is working for the future of all Minnesotans by addressing the development of diverse youth.

Floods in southeast Minnesota affected the activities of several 4-H clubs, and youth extended a helping hand. Wabasha County 4-Hers spent nearly 500 hours helping clean mud from homes and outbuildings and assembling relief packages for displaced residents in the Stockton area. In Winona and Fillmore counties 4-H organized an eight-week, after-school program for children of families affected by the flood.

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

1. Evaluation Studies Planned

- After Only (post program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

Findings of the longitudinal Tufts study on 4H programming were analyzed for Minnesota findings.

4-H youth who participated in the study show evidence of active involvement, contribution and leadership.These youth are active in a variety of additional activities, in addition to 4-H:53% in weekly community programs and 21% in monthly programs. Participants are also often leaders -- 79% say they have been a leader in a group or organization in the past year, and 93% are likely to help others in their community.

Key Items of Evaluation

4-H youth who participated in the study show evidence of active involvement, contribution and leadership.These youth are active in a variety of additional activities, in addition to 4-H:53% in weekly community programs and 21% in monthly programs. Participants are also often leaders -- 79% say they have been a leader in a group or organization in the past year, and 93% are likely to help others in their community.

Program #2

V(A). Planned Program (Summary)

1. Name of the Planned Program

Agricultural Business Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	10%		20%	
602	Business Management, Finance, and Taxation	40%		20%	
603	Market Economics	10%		30%	
604	Marketing and Distribution Practices	40%		20%	
610	Domestic Policy Analysis	0%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	8.9	0.0	16.3	0.0
Actual	8.6	0.0	27.6	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
170698	0	984476	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
303150	0	2143885	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
113462	0	2634354	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

In 2007, Agricultural Business Management programs provided relevant and current information to farm proprietors, helping them sort through options to enhance profits and reduce risk in volatile markets.Using research-based software developed by the Department of Applied Economics, the program provided educational event events, consultations and media resources informing agriculture business management issues.Current topics of great concern to the industry were addressed, including farmland rental rates, farmland values and rental contracts, and whether to invest in growing crops whose profits are currently high.With retirees leaving the business in a time of high land prices, smart farm transfers were on the minds of the agricultural industry this year.

Software in the FINPack program needed to be changed to incorporate new business realities.

2. Brief description of the target audience

Acting on survey and anecdotal data, ABM programs this year continued to direct its educational content to key those who disseminate information, including:

•Minnesota's farmers •Farm business management associations •Agricultural leaders •Other agricultural professionals (e.g., crop consultants) •Farm business management educators •State and federal policy makers

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	8100	4000	0	0
2007	9481	7641	0	0

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

Patent Applications Submitted

Year	Target
Plan:	1
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	2	50	52

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Educational events will deliver agricultural business management content. (Target expressed as the number of events.)

Year	Target	Actual
2007	210	203

Output #2

Output Measure

- Consultations will deliver tailored content to business planning. (Target described as numbers of consultations.)

Year	Target	Actual
2007	130	150

Output #3

Output Measure

- Media and publications will provide timely information about current events in agricultural business management. (Target expressed as number of articles or releases disseminated.)

Year	Target	Actual
2007	105	22

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Participants will shift business practices based on information in Agricultural Business Management programs. (Target expressed as a percentage of those reporting change.)
2	Winning the Game program participants will increase farm profits with the information that is provided. (Target expressed as millions of dollars of financial impact from the program.)
3	Transfer of farm estates will be done using research-based estate planning. (Target expressed in millions of dollars of estates affected.)
4	FINBIN online database will be enhanced to allow dynamic queries for benchmarking and comparisons of different production sytems.

Outcome #1

1. Outcome Measures

Participants will shift business practices based on information in Agricultural Business Management programs. (Target expressed as a percentage of those reporting change.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	90	98

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management

Outcome #2

1. Outcome Measures

Winning the Game program participants will increase farm profits with the information that is provided. (Target expressed as millions of dollars of financial impact from the program.)

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

Follow up evaluation survey results indicated that farmer-participants changed or modified their post-harvest marketing prices as a result of attending the program, enabling them to increase their net farm income by $3,646 per farm, on average. The total financial impact of the post harvest 'Winning the Game 4' program effort was $1.6 million for the 2006-07 programming year. (Note that the actual amount was not 'expressed as millions of dollars' because the field does not allow decimals.)

4. Associated Knowledge Areas

KA Code	Knowledge Area
604	Marketing and Distribution Practices
602	Business Management, Finance, and Taxation

Outcome #3

1. Outcome Measures

Transfer of farm estates will be done using research-based estate planning. (Target expressed in millions of dollars of estates affected.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	440

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

For Farm Transfer and Estate Planning, a total of 98% of the participants stated that as a result of attending one of the workshops, they were going to begin the process of developing and implementing a farm business transfer and estate plan. This percentage of assets from the 382 farm units attending represents approximately $440.2 million dollars of potential financial impact of this program effort. A follow-up evaluation process later in the year will help to validate actual financial impact as reported by farm family participants.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #4

1. Outcome Measures

FINBIN online database will be enhanced to allow dynamic queries for benchmarking and comparisons of different production sytems.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

To make good business decisions, farmers need access to high quality, uniform farm management benchmarking information.

What has been done

The FINBIN online database is one of the country's foremost data sources for researching farm profitability and competitiveness. It has been enhanced this year and has expanded to include data from eight states. The database allows producers and agricultural professionals to search and query actual farm data from more than 33,000 farms representing more than 3.6 million acres of crop land, over 85,000 dairy cows, 55,000 beef cows, and over 2.4 million pigs. Participating producers receive individualized instruction in farm financial management, business analysis, agricultural accounting, and business management. Individual analyses are complied into the uniform FINBIN database, allowing producers to benchmark their production and financial performance against peer group performance. The FINBIN online database has been enhanced to allow dynamic queries for sophisticated benchmarking and simultaneous comparisons of different production systems. Researchers, educators, and producers throughout the country have access to the database and the summarized production and financial data in the database.

Results

Since its inception, over 106,000 detailed benchmark reports have been generated by producers and educators. Producers can benchmark hundreds of factors on their farm against similar farms by size, type, and location to evaluate the strengths and weaknesses of their business. A companion tool, myFINBIN, was developed in 2007 with state of Minnesota funding to provide participating producers direct access to financial and production benchmarks for their farms.

New research projects are emerging using this database. FINBIN was awarded the Outstanding Agricultural Economics Extension website award by the American Agricultural Economics Association in 2006. It also received the high score in a UK Global Best Practice in Agricultural Benchmarking Study conducted by Prospect Management Services, UK.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation
601	Economics of Agricultural Production and Farm Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Public Policy changes
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

In 2007, information needed to be disseminated to victims of drought.Spiraling prices required program adaptations,and generated increased demand for education.Farmers were confused on how to deal with business decisions in a changing climate of land values, rental exchanges and high income crops.Presentations changed to address economic forces.Stakeholders have expressed that the importance of the Agricultural Business Management is growing as a result of farm transfers.

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

1. Evaluation Studies Planned

- After Only (post program)

Evaluation Results

Winning the Game program participants were asked to rate the quality and usefulness of the post-harvest marketing program.A total of 87.7% of participants rated the program good or excellent. Utilizing the post-harvest information from the program, farmers can garner an additional $0.25 per bushel of corn sold, $0.55 per bushel of soybeans sold, and $0.25 per bushel of wheat sold.This is based upon 17 years of historical price data.

Following each Farm Transfer and Estate planning workshop, participants were asked to complete an evaluation to indicate their change in understanding of a number of key educational points of the workshop.They were asked to respond using a Likert scale numerical rating system of 1 through 5 (1=strongly disagree to 5 = strongly agree).Results are shown below.(The higher the weighted average score the better the understanding).

I better understand the need for clear goals and communication as part of the transfer process:4.5

I better understand the strategies available for use in atransfer plan:4.4

I better understand the importance of assessing the financial strength of the farm business:4.4

I better understand tax issues related to the farm transfer process:4.3

I better understand wills, trusts and estate planning strategies:4.4

I better understand life insurance, power-of-attorney and health care issues as part of the process:4.3

Key Items of Evaluation

The economic impact of the Winning the Program is estimated to be $1.6 million.

The economic impact of the Farm Transfer and Estate Planning is approximately $440.2 million.

Program #3

V(A). Planned Program (Summary)

1. Name of the Planned Program

Leadership and Civic Engagement

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	60%		0%	
803	Sociological and Technological Change Affecting Individuals, Fam	40%		100%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	11.1	0.0	1.0	0.0
Actual	11.6	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
296506	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
368633	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
546361	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

In 2007, sponsors brought Leadership and Civic Engagement educators to their communities to increase or strengthen community leadership, make public meetings more productive, address conflict, create a community vision or strengthen social capital and public participation.

Research published by UMN Extension Leadership specialists this year showed that longer program interventions result in more positive skill and attitude development within leadership education programs.Therefore, better program impacts will result from the 20 long-term leadership education cohort groups that were convened in 2007.In addition, 17 groups engaged in longer-term educational programming focused on community planning, effective facilitation, or study of poverty in communities.

Among the leadership and civic engagement programs conducted in 2007 was an expansion of the program initiative funded by the Northwest Area Foundation, which provides Minnesota with a new resource to reduce community poverty in communities with fewer than 5,000 in residents and poverty rates over 10%.Horizons staff expect that the program will continue in coming years, bringing Extension new perspectives and knowledge about moving communities from discussion to leadership preparation to action to reduce poverty.

New investments from the University of Minnesota direct leadership and civic engagement efforts at nurturing regional partnerships to support the new regional economic paradigm.Several of our cohort groups are directed at that goal, and are being observed for lessons and program improvement.

2. Brief description of the target audience

All Leadership and Civic Engagement events and cohort groups were sponsored by organizations such as local and regional government, state associations, grassroots community organizations.Leadership and Civic Engagement programs reach out to five primary audiences:

•local government agencies, employees and leaders •Chambers of Commerce and economic development associations •nonprofit organizations and collaborative associations •foundations and their grantees •the natural resources sector Cohort group programming this year reached community volunteers, emerging and existing leaders and employees through relationships with higher education organizations, community groups, foundations,soil and water conservation districts, government associations, early childhood education collaboratives, and smart growth initiatives, among others.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	5500	4500	0	0
2007	8033	5254	901	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	2	0	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Community cohort groups will meet to develop leadership skills and create civic connections. (Target expressed as number of cohort groups convened.)

Year	Target	Actual
2007	18	37

Output #2

Output Measure

- Community assessments and research projects will help communities understand their strengths related to civic leadership and social capital. (Target expressed as number of local assessments conducted.)

Year	Target	Actual
2007	5	15

Output #3

Output Measure

- Workshops and other structured gatherings will provide communities with increased skills, knowledge and behaviors related to leadership and civic engagement. (Target expressed as number of events.)

Year	Target	Actual
2007	400	244

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Each participant in U-Lead programs will report growth including skills, aspirations and knowledge to impact the future of their communities. (Target expressed as percentage of program participants who experience enhancements.)
2	Communities who engage with Leadership and Civic Engagement programming will create plans that involve relevant stakeholders. (Target expressed as the number of communities.)
3	Communities and groups will experience a greater quantity of leadership available. (Target expressed as the number of leadership positions held by cohort group members after Extension U-Lead education.)
4	Structured community gatherings are more productive. (Target expressed as percentage of participants who report in follow-up surveys that participation in LCE programming led to improvements in the process and product of structured community gatherings.)

Outcome #1

1. Outcome Measures

Each participant in U-Lead programs will report growth including skills, aspirations and knowledge to impact the future of their communities. (Target expressed as percentage of program participants who experience enhancements.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	75	84

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Leadership education research has identified five factors that strengthen community leadership skills and behaviors. The University of Minnesota uses the Community Leadership survey to examine whether its cohort group programs gain skills and knowledge in each of those five factors: 1) civic engagement; 2) community commitment; 3) community knowledge; 4) personal growth and self-efficacy and 5) shared future and purpose.

With these enhancements, emerging and existing leaders can provide better leadership in their communities.

What has been done

Cohort programs gather in multiple sessions to experience the U-Lead program curriculum and develop strong leadership networks. The Community Leadership Program Survey assessed 28 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.

Results

The 84% change reported above reflects the average percentage of participants who improved among each of the five factors described above. Percentages for each of the five factors are:
Personal Growth and Self-efficacy: 90.4% of participants improved
Community Knowledge: 86.5% of participants improved
Civic Engagement: 86.5% of participants improved
Shared Future and Purpose: 82.4% of participants improved
Community Commitment: 73.1% of participants improved

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Fam

Outcome #2

1. Outcome Measures

Communities who engage with Leadership and Civic Engagement programming will create plans that involve relevant stakeholders. (Target expressed as the number of communities.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	30	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

This goal, related to Public Participation Strategies curriculum, was not measured because the program is still in development.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #3

1. Outcome Measures
Communities and groups will experience a greater quantity of leadership available. (Target expressed as the number of leadership positions held by cohort group members after Extension U-Lead education.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	918	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Leadership education programs are designed to stimulate more leadership, and better leaders to work in communities. For this reason, we track the levels of involvement of each of our cohort group members before and after the program. In the 2008 - 2012 plan of work, we revised this outcome measure to read, 'Community Leadership cohort group members will increase the intensity of their leadership.'

What has been done

The organizational analysis of the cohort group pre- and post-survey asks participants to record their organizational involvements and the levels of those involvements at the beginning and at the end of the program.

Results

At the beginning of the program, 59 of 219 organizational roles were described as leadership roles. At the end of the program, 84 of 218 organizational roles were described as leadership roles. This represents a 42% increase in the number of leadership roles held by members of U-Lead cohort groups.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
803	Sociological and Technological Change Affecting Individuals, Fam

Outcome #4

1. Outcome Measures

Structured community gatherings are more productive. (Target expressed as percentage of participants who report in follow-up surveys that participation in LCE programming led to improvements in the process and product of structured community gatherings.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	86

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Communities sometime need impartial and skilled facilitation to move forward on community planning and visioning while creating more cohesive work groups.

What has been done

Trained facilitators from the program team worked with communities throughout the year. This study interviewed 20 facilitation clients to assess the degree to which facilitation led to improvements in the process and product of structured community gatherings. Four outcomes were assessed.

Results

The four outcomes were:
Success at Accomplishing Goal of Gatherings: 95% of communities
Success of Meeting Process in Helping Accomplish Goals: 95% of communities
Success in Formulating a Plan to Address Goals: 74% of communities
Success in Following Through with Plans: 79% of communities

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Appropriations changes
- Public Policy changes
- Other (Cultural Adaptation)

Brief Explanation

The major affect on our outcomes was the growth of investment from communities, government and foundations in cohort group programs and local programs.Communities and sectors are seeking to understand the strengths and weaknesses of their current structures so that they can better work together for the future.In some cases, state directors invest in emerging leadership for their statewide organizations, or to support their own strategic objectives.In many other cases, grassroots leaders understand that their community needs to act for the future in a time of civic, global and economic change.In addition, an investment from the Northwest Area Foundation and the University has added six staff to this program team, creating more program capacity.

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Case Study
- Other (Educator and community reports.)

Evaluation Results

Key Items of Evaluation

Program #4

V(A). Planned Program (Summary)

1. Name of the Planned Program

Community Youth Development

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
805	Community Institutions, Health, and Social Services	50%		0%	
806	Youth Development	50%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	12.8	0.0	0.0	0.0
Actual	12.6	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
142480	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
588576	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
677155	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

In 2007, Community Youth Development programs formally changed the program name to the Youth Work Institute.This reflects a commitment to focus on education and training for strong professionals, strong programs and a strong field of youth development. Extension staff for this program has grown because UMN Extension doubled its commitment. In 2005, six regional educators with masters degrees committed 50% of their time to the Institute.In 2007, seven regional educators devote 100% of their time to Institute work.

With this greater commitment and focus, the Youth Work Institute strengthened its administrative and operational structure. A data base of 7,500 youth professionals consistently received information about the Institute's research-based programs, and received ongoing email updates about the field.

An important emphasis this year was the Institute's special response to a critical Minnesota issue -- the return of 2,600 soldiers from Iraq. In response, the Institute set out to "retool" hometown ministers, teachers, social workers, government service workers and health professionals so that they can understand and address the symptoms of stress in families and children's lives upon the soldier's return.The Institute reached 1,168 adult professionals in 36 trainings around the state with research-based information.

2. Brief description of the target audience

The Youth Work Institute has focused its planning, promotion and marketing of its educational delivery in order to increasingly "reach the right people."The high quality database includes over 7,500 youth workers and people interested in the field who have attended classes or taken part in our Institute.The events conducted by the Institute spotlighted and made more visible youth workers in communities.As a result, demand for workshops and training has grown steadily in the metro area and in Greater Minnesota.Participation in foundational classes and workshops grew significantly -- from 920 in 2005 to 2,254 in 2007.

Contracts with agencies such as the United Way, the MN Department of Education, the MN Department of Human Services and Hennepin County Human Services now sponsor at least 50% of the trainings offered, so that research on youth development is now being "hard-wired" into the systems that serve youth and families.

With such a focused data base of youth workers, the Institute was ready to respond quickly in 2007 when communities were challenged to address the needs of military families.Special programming, outreach and media related to this topic provided a responsive service to these youth workers.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	7500	4000	0	0
2007	4238	7500	0	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	2	0	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Community Youth Development Tools will be disseminated.

Year	Target	Actual
2007	500	750

Output #2

Output Measure

- Public offerings will recruit increasing number of registrants involved in youth development. (Target expressed as the percentage of registration capacity filled.)

Year	Target	Actual
2007	80	94

Output #3

Output Measure

- Participating organizations will participate in cohort learning groups. (Target expressed as a percentage of participating organizations.)

Year	Target	Actual
2007	30	20

Output #4

Output Measure

- Individuals representing diverse organizations will participate in networks and collaboratives directly managed by Community Youth Development staff. (Target expressed as number of organizations involved.)

Year	Target	Actual
2007	100	100

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Minnesota practitioners will use effective resources for youth work professioanls (Targets expressed as numbers of organizations utilizing resources.)
2	Participants at public educational offerings will report that they increased their knowledge of program effectiveness. (Target expressed as a percentage of participants.)
3	Participants in public education offerings will report that their participation increased their ability to improve impact on youth. (Target expressed as percentage of those in agreement.)

Outcome #1

1. Outcome Measures

Minnesota practitioners will use effective resources for youth work professioanls (Targets expressed as numbers of organizations utilizing resources.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	100	147

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth workers need tools to improve the quality of their programs and their affect on child development.

What has been done

The Quality Matters project is a national study to determine if support actually improves program quality.

Results

90% responded that to a great extent or some extent staff now have regular ways to improve their program.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Participants at public educational offerings will report that they increased their knowledge of program effectiveness. (Target expressed as a percentage of participants.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	90	80

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth workers in many community-based settings have opportunities to improve child development outcomes of youth.

What has been done

Trainings have educated youth workers about research and best practice. The Quality Matters project, operating in 48 programs statewide, is monitoring whether support actually improves program quality. A total of 39 respondents completed a post evaluation survey.

Results

80% responded that they now have a better sense of what research and best practice say about program quality.

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Participants in public education offerings will report that their participation increased their ability to improve impact on youth. (Target expressed as percentage of those in agreement.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	75	69

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth workers in community settings have great responsibilities in supporting child development. Trainings through the Youth Work Institute pass along research-based education to give them more success.

What has been done

Trainings were provided to youth workers. The Quality Matters project monitored the success of 48 programs statewide. A total of 39 respondents completed a post-evaluation survey.

Results

90% responded that to a great extent or some extent, staff now have regular ways to improve their program. Moreover, 80% responded that they now have a better sense of what research and best practice say about program quality.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Appropriations changes
- Competing Public priorities

Brief Explanation

Funding from the Department of Defense allowed the team to respond to the needs of military families in Minnesota.

New leadership in the Institute, as well as increased investment from the University of Minnesota, allowed for planning efforts that happened in 2007 as a result of the self-assessment and restructuring gives the program team great confidence that future activities will be successful.

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Case Study
- Other ()

Evaluation Results

Key Items of Evaluation

Program #5

V(A). Planned Program (Summary)

1. Name of the Planned Program

Family Relations

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

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

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	9.2	0.0	5.7	0.0
Actual	8.1	0.0	8.6	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
472649	0	75136	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	696294	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
62594	0	215327	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

In 2007, 123 educational events were conducted for families, parents of teens, divorcing parents, professionals and educators who reach parents in ways that Extension does not.Sixteen publications were produced on current topics, many of which were placed on a popular web site, www.parenting.umn.edu.

The family education network in the metro area listserve reached 660 participants.This network sent out 154 messages about relevant, current topics and new research findings.Extension was a popular source for interviews by local and statewide media, including an American Radio Works program on Children of Divorce.

Notable this year is the continued success of the Parents Forever program.In 2007, the program for divorcing parents was offered in 65 of Minnesota's 87 counties through local partnerships with trainers who are trained by Extension to deliver service. Since its inception in 1997, Parents Forever has reached an estimated 20,000 parents. Available in English and Spanish,the program is based on the latest research and designed and tested by educators at the University of Minnesota.

MAES research supported development of parenting curriculum, as well as informing family social scientists and policy makers on results of family system research.

2. Brief description of the target audience

The program serves professionals mental health professionals, parent educators, schools, courts, family service agencies, health care settings and others. Ultimately, these professionals reach parents who are divorcing, parents of adolescents and parents of pre-school and school-aged children. In 2007, the University of Minnesota hosted the National Extension Association of Family and Consumer Sciences conference.This conference reached Family Consumer Sciences professionals nationwide.

In addition to reaching parents and professionals in 2007, the program reached out to grandparents in a program called Grandparenting in a Changing World Learning Circle.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	3500	0	50	0
2007	4555	45721	0	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	2	30	32

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Publications will be distributed.

Year	Target	Actual
2007	25000	13354

Output #2

Output Measure

- Professionals will be trained.

Year	Target	Actual
2007	200	1146

Output #3

Output Measure

- Parents will participate in Extension trainings.

Year	Target	Actual
2007	3000	3409

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Increase in knowledge of normative development, parenting practices and helping children through transitions. (Target expressed as a percentage of participants showing increased knowledge.)
2	Increased understanding of issues related to parenting children, adolescents and issues of families related to divorce, separation and stepfamilies. (Target expressed as a percentage of participants reporting increased understanding.)
3	Parents will increase parent/child communication, improve parenting practices, improve parent satisfaction and confidence. (Target expressed as a percenage of those reporting increase.)
4	Parents will apply strategies that increase resiliency and reduce risk associated with family transitions.
5	Professionals will maximize resources and develop strategies that address identified needs of families. (Target expressed as percentage of participants reporting outcome.)
6	There will be economic benefits for individuals, families and society as parenting responsibility increases and children exhibit less risky behavior and acting out.
7	There will be decreased incidences of child abuse and neglect in families where parents have received education and support.
8	Parent education will become more available and accepted in community settings.
9	There will be reduced youth risk behavior and an increase in healthy development of children through healthier parent/child relationships.
10	Professionals who work with parents and families will increase their knowledge regarding up-to-date research on parenting practices, positive child development and family functioning and well-being. (Target expressed as a percentage of participants who report knowledge gain.)
11	Parents will increase their knowledge regarding up-to-date research on parenting practices, positive child development and family functioning and well-being. (Target expressed as a percentage of participants who reported knowledge gain.)
12	Parents will improve their parenting skills. (Target expressed as percentage reporting improvement.
13	Parents who are mandated to participate in Parents Forever because of contentious divorce situations will reduce conflict in front of their children following divorce. (Target expressed as percentage of parents who report reducing conflict.)
14	Parents mandated to participate in Parents Forever because of contentious divorce situations will increase their children's access to both parents following divorce. (The lower percentage reflects that these cases often occur where having access to both parents is not in the best interest of the children.)

Outcome #1

1. Outcome Measures

Increase in knowledge of normative development, parenting practices and helping children through transitions. (Target expressed as a percentage of participants showing increased knowledge.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	75	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

OUTCOME MEASURES FOR FAMILY RELATIONS PROGRAMS WERE CHANGED IN 2007 AND CROSS-CUTTING PROGRAM OUTCOMES ARE BEING REPORTED. THIS OUTCOME WAS DELETED.

Results

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Increased understanding of issues related to parenting children, adolescents and issues of families related to divorce, separation and stepfamilies. (Target expressed as a percentage of participants reporting increased understanding.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	75	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

OUTCOME MEASURES FOR FAMILY RELATIONS PROGRAMS WERE CHANGED IN 2007 AND CROSS-CUTTING PROGRAM OUTCOMES ARE BEING REPORTED. THIS OUTCOME WAS DELETED.

Results

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Parents will increase parent/child communication, improve parenting practices, improve parent satisfaction and confidence. (Target expressed as a percenage of those reporting increase.)

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	75	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Parenting skills are not instinctive, but rather a complex set of skills that require communication, empathy, and common sense. Parenting is not a job for the faint-hearted. Good parenting, however, can be learned, and the benefits to children, to the parents themselves, and to society at large, are immense.

What has been done

MAES research supported development of the Parenting Together Project, an educational intervention with 164 couples. The researcher also conducted interviews with 16 successfully married couples who began their life together as fragile families. Seventy-threee unmarried couples were recruited for a five-year Family Formation Project. This included conducting assessments, and providing all of the couples with relationship coaching and some of them with mentor couples.

Results

The Parenting Together Project curriculum has been disseminated to a number of parenting and health care programs nationally and internationally. Preliminary outcomes from the other programs: Participants in the Family Formation Project have acquired new knowledge and skills for making couple relationships successful in stressful circumstances. More of these couples have stayed together than comparision couples in the national Fragile Families Study. Participants in the Citizen Father project have developed more knowledge of the attitudes and skills required to be a healthy, involved father. They have also developed citizen skills in conceptualizing challenges faced by single fathers.

4. Associated Knowledge Areas

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

Outcome #4

1. Outcome Measures

Parents will apply strategies that increase resiliency and reduce risk associated with family transitions.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

OUTCOME MEASURES FOR FAMILY RELATIONS PROGRAMS WERE CHANGED IN 2007 AND CROSS-CUTTING PROGRAM OUTCOMES ARE BEING REPORTED. THIS OUTCOME WAS DELETED.

Results

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures
Professionals will maximize resources and develop strategies that address identified needs of families. (Target expressed as percentage of participants reporting outcome.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

OUTCOME MEASURES FOR FAMILY RELATIONS PROGRAMS WERE CHANGED IN 2007 AND CROSS-CUTTING PROGRAM OUTCOMES ARE BEING REPORTED. THIS OUTCOME WAS DELETED.

Results

4. Associated Knowledge Areas

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

Outcome #6

1. Outcome Measures

There will be economic benefits for individuals, families and society as parenting responsibility increases and children exhibit less risky behavior and acting out.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

OUTCOME MEASURES FOR FAMILY RELATIONS PROGRAMS WERE CHANGED IN 2007 AND CROSS-CUTTING PROGRAM OUTCOMES ARE BEING REPORTED. THIS OUTCOME WAS DELETED.

Results

4. Associated Knowledge Areas

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

Outcome #7

1. Outcome Measures

There will be decreased incidences of child abuse and neglect in families where parents have received education and support.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

OUTCOME MEASURES FOR FAMILY RELATIONS PROGRAMS WERE CHANGED IN 2007 AND CROSS-CUTTING PROGRAM OUTCOMES ARE BEING REPORTED. THIS OUTCOME WAS DELETED.

Results

4. Associated Knowledge Areas

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

Outcome #8

1. Outcome Measures

Parent education will become more available and accepted in community settings.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

OUTCOME MEASURES FOR FAMILY RELATIONS PROGRAMS WERE CHANGED IN 2007 AND CROSS-CUTTING PROGRAM OUTCOMES ARE BEING REPORTED. THIS OUTCOME WAS DELETED.

Results

4. Associated Knowledge Areas

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

Outcome #9

1. Outcome Measures

There will be reduced youth risk behavior and an increase in healthy development of children through healthier parent/child relationships.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

OUTCOME MEASURES FOR FAMILY RELATIONS PROGRAMS WERE CHANGED IN 2007 AND CROSS-CUTTING PROGRAM OUTCOMES ARE BEING REPORTED. THIS OUTCOME WAS DELETED.

Results

4. Associated Knowledge Areas

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

Outcome #10

1. Outcome Measures

Professionals who work with parents and families will increase their knowledge regarding up-to-date research on parenting practices, positive child development and family functioning and well-being. (Target expressed as a percentage of participants who report knowledge gain.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #11

1. Outcome Measures

Parents will increase their knowledge regarding up-to-date research on parenting practices, positive child development and family functioning and well-being. (Target expressed as a percentage of participants who reported knowledge gain.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	80

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #12

1. Outcome Measures
Parents will improve their parenting skills. (Target expressed as percentage reporting improvement.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	72

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #13

1. Outcome Measures

Parents who are mandated to participate in Parents Forever because of contentious divorce situations will reduce conflict in front of their children following divorce. (Target expressed as percentage of parents who report reducing conflict.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #14

1. Outcome Measures
Parents mandated to participate in Parents Forever because of contentious divorce situations will increase their children's access to both parents following divorce. (The lower percentage reflects that these cases often occur where having access to both parents is not in the best interest of the children.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	30

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

We surpassed many of our output goals, largely because of demand for programming and because of the collaborative nature of the program.Family development programs conscientiously adapt their programs for non-English speaking audiences, creating even more demand for programming.

The train-the-trainer model program methodology was not utilized in 2007.

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Comparisons between program participants (individuals,group,organizations) and non-participants

Evaluation Results

Parents who completed Parents Forever post-divorce education programs within six months and within twelve months were randomly selected to complete phone interviews.Forty-four parents from the six month group and 45 parents from the twelve-month group completed phone interviews.

Many parents reported improvements in behaviors around parent conflict in front of the children.

•At the start of the program 32.6% of parents used their children to carry messages to the other parent.After completing the program, 48% of the parents who had used their children to carry messages reported engaging in this behavior "less".20.7% reported not engaging in that behavior at all. •At the start of the program, 38.2% put down the other parent in front of their children.After, 51.5% of those parents reported engaging those behaviors less often.36.4% reported not engaging in those behaviors at all.

•At the start of the program, 27% of parents quizzed their children about the other parents.At the end of the program, 8.3% of those parents said they quizzed their children less; 70.8% said they hadn't engaged in that behavior at all.
•Improvement in cooperation with the other parent was reported.(58.4%) •Greater emotional well-being was also reported.(78.7%) •In terms of eliminating parent conflict in front of their children, 75% of parents reported they had made changes in avoiding conflict with the other parent.Nearly half (43%) reported handling their anger with the other parent by talking it out with them, and 30.3% of parents reported increasing the amount of time the children spent with the other parent.

Key Items of Evaluation

Recent evaluation data supports the program's success. After participating in Parents Forever, 75 percent of attendees reported they had reduced conflict with the other parent in front of their children, and 66 percent said they cooperated better with the other parent about their children.

Program #6

V(A). Planned Program (Summary)

1. Name of the Planned Program

Family Resource Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management	90%		100%	
806	Youth Development	10%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	11.1	0.0	3.1	0.0
Actual	8.0	0.0	4.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
235828	0	47359	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
156119	0	401760	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
205338	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

In 2007, 375 Family Resource Management educational events were conducted.This award winning team works conscientiously to adapt its programming for non-English speaking Minnesotans, and to address critical current events in financial management.This year, 39% of participants were Minnesotans of color.Wide dissemination of informational materials worked to change attitudes about spending, to provide practical and unbiased information about housing mortgages, about raising children in a materialistic culture, about use of credit, and about fiscal planning for later life.

MAES family resource management research has informed social science professional, education and policy makers on the financial impacts of divorce on children, on financial strategies for later life stages, and employment constraints on low-income rural women.

2. Brief description of the target audience

Our audiences include the following.

For youth and money:adolescents moving into independent living; teachers K-12, professional staff-credit union representatives, college staff and faculty, college students and youth.

For financial security in later life: employees at work sites; some community non-profit groups and individuals who utilize on-line website resources and self-study modules.

For resource management for daily life programs: the general public; individuals and families who seek knowledge and skills by choice or mandate; professionals seeking to enhance knowledge; public and private agencies, organizations and businesses seeking training to enhance their delivery of resource management programs.

In addition this year, Minnesota hosted the National Extension Association of Family Consumer Sciences national meeting with 900 attendees.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	**Target**	**Target**	**Target**	**Target**
Plan	5000	14000	70	2000
2007	7377	13493	7885	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	2	15	17

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Training will be held for trainers in other organizations so that they can deliver education to their constituents. (Target expressed as the number of events delivered.)

Year	Target	Actual
2007	235	12

Output #2

Output Measure

- Community-based workshops will be held for individuals and families. (Target expressed as the number of events delivered.)

Year	Target	Actual
2007	360	375

Output #3

Output Measure

- Curricula and guides will be distributed to practitioners.

Year	Target	Actual
2007	2000	4861

Output #4

Output Measure

- Outreach efforts will educate employers about financial security needs of employees and provide opportunities for on-site workshops. (Target expressed as number of employing businesses reached.)

Year	Target	Actual
2007	175	57

Output #5

Output Measure

- Twenty percent (20%) of targeted employers will schedule workshops. (Target expressed as number of workshops held yearly.)

Year	Target	Actual
2007	35	42

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Individuals and families of all cultures who participate in in Resource Management programming will report that they have increased knowledge related to the targeted financial management goal. (Target expressed as a percentage of participants.)
2	Employees will be more aware that they must plan now for security in later life. (Target expressed as percentage of program participants.)
3	Employees who participate in financial security in later life workshops will increase their knowledge, confidence and skills that support their success in planning for financial security in later life. (Target expressed as a percentage of participants.)
4	Young adults will implement changes in resource management behaviors after studying High School Financial Planning curriculum content. (Target expressed as percentage of participants.)
5	4-H Consumer Contest participants will commit to applying the decision-making model in real life situations. (Target expressed as percent of participants.)
6	College students will report increased financial skills related to financial management, tenant issues, credit/debt and identity theft issues. (Target expressed as a percentage of participants.)
7	Individuals and families of all cultures who participate in Resource Management programming will report that they have changed behavior related to the targeted financial management goal. (Target expressed as a percentage of participants.)
8	Participants in teacher trainings for Youth and Money will report increased use of quality financial literacy program tools. (Target expressed as a percentage of participants.)
9	Teachers will increase their use of research-based curricula in financial management. (Target expressed as a percentage of teachers indicating increase in use.)
10	Individuals, families and employees who participate in Resource Management programming will report they have increased confidence (increased efficacy) in financial management, decision-making and planning for later life. (Target expressed as a percentage of participants who report increasing efficacy.)
11	Individuals, families and employees who participate in Resource Management programming will report that they have used the knowledge/materials gained from the program to change behaviors related to targeted financial management goals. (Target expressed as a percentage of participants who reported making behavior change.)
12	Information concerning Minnesota court orders establishing financial support for children of divorced parents will inform both policy-makers and Extension programming related to divorcing parents.
13	Studying the policies that support the labor force participation of rural low-income families will inform policy makers and Extension programing.

Outcome #1

1. Outcome Measures

Individuals and families of all cultures who participate in in Resource Management programming will report that they have increased knowledge related to the targeted financial management goal. (Target expressed as a percentage of participants.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	30	93

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The financial security of Minnesota's families, as well as the fiscal security of the state's economy, will be adversely affected if Minnesotans are not adequately prepared to make informed decision about financing long term care.

What has been done

Findings from this MAES research help ensure that understanding of long term care risk management is grounded in reality. The focus in 2007 was on examining how perception of the problem and financial goals are sources of conflict for employees and their spouses.

Results

Specific findings have been used to develop interactive decision-making tools available on the web. Users include a nationwide audience of baby boomers and younger elders seeking out information to plan in advance for retirement and later life. The website addresses the gaps in existing education resources. Findings have contributed to Extension programing designed to reach employees at the worksite with educational workshops. Findings are also being disseminated to family economics and family gerontology professionals.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #2

1. Outcome Measures

Employees will be more aware that they must plan now for security in later life. (Target expressed as percentage of program participants.)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	70	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

BECAUSE OF THE DEVELOPMENT OF A MORE COMPREHENSIVE EVALUATION PLAN ACROSS FINANCIAL LITERACY PROGRAMS, THIS TARGET WAS DELETED IN THE 2008 PLAN OF WORK, AND WAS NOT MEASURED IN 2007.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #3

1. Outcome Measures

Employees who participate in financial security in later life workshops will increase their knowledge, confidence and skills that support their success in planning for financial security in later life. (Target expressed as a percentage of participants.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	70	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

BECAUSE OF THE DEVELOPMENT OF A MORE COMPREHENSIVE EVALUATION PLAN ACROSS FINANCIAL LITERACY PROGRAMS, THIS TARGET WAS DELETED IN THE 2008 PLAN OF WORK, AND WAS NOT MEASURED IN 2007.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #4

1. Outcome Measures

Young adults will implement changes in resource management behaviors after studying High School Financial Planning curriculum content. (Target expressed as percentage of participants.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	40	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

BECAUSE OF THE DEVELOPMENT OF A MORE COMPREHENSIVE EVALUATION PLAN ACROSS FINANCIAL LITERACY PROGRAMS, THIS TARGET WAS DELETED IN THE 2008 PLAN OF WORK, AND WAS NOT MEASURED IN 2007.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #5

1. Outcome Measures
4-H Consumer Contest participants will commit to applying the decision-making model in real life situations. (Target expressed as percent of participants.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	20	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

BECAUSE OF THE DEVELOPMENT OF A MORE COMPREHENSIVE EVALUATION PLAN ACROSS FINANCIAL LITERACY PROGRAMS, THIS TARGET WAS DELETED IN THE 2008 PLAN OF WORK, AND WAS NOT MEASURED IN 2007.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #6

1. Outcome Measures

College students will report increased financial skills related to financial management, tenant issues, credit/debt and identity theft issues. (Target expressed as a percentage of participants.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

BECAUSE OF THE DEVELOPMENT OF A MORE COMPREHENSIVE EVALUATION PLAN ACROSS FINANCIAL LITERACY PROGRAMS, THIS TARGET WAS DELETED IN THE 2008 PLAN OF WORK, AND WAS NOT MEASURED IN 2007.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #7

1. Outcome Measures

Individuals and families of all cultures who participate in Resource Management programming will report that they have changed behavior related to the targeted financial management goal. (Target expressed as a percentage of participants.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	20	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

BECAUSE OF THE DEVELOPMENT OF A MORE COMPREHENSIVE EVALUATION PLAN ACROSS FINANCIAL LITERACY PROGRAMS, THIS TARGET WAS DELETED IN THE 2008 PLAN OF WORK, AND WAS NOT MEASURED IN 2007.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #8

1. Outcome Measures

Participants in teacher trainings for Youth and Money will report increased use of quality financial literacy program tools. (Target expressed as a percentage of participants.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	30	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

BECAUSE OF THE DEVELOPMENT OF A MORE COMPREHENSIVE EVALUATION PLAN ACROSS FINANCIAL LITERACY PROGRAMS, THIS TARGET WAS DELETED IN THE 2008 PLAN OF WORK, AND WAS NOT MEASURED IN 2007.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #9

1. Outcome Measures

Teachers will increase their use of research-based curricula in financial management. (Target expressed as a percentage of teachers indicating increase in use.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	30	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

BECAUSE OF THE DEVELOPMENT OF A MORE COMPREHENSIVE EVALUATION PLAN ACROSS FINANCIAL LITERACY PROGRAMS, THIS TARGET WAS DELETED IN THE 2008 PLAN OF WORK, AND WAS NOT MEASURED IN 2007.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #10

1. Outcome Measures
Individuals, families and employees who participate in Resource Management programming will report they have increased confidence (increased efficacy) in financial management, decision-making and planning for later life. (Target expressed as a percentage of participants who report increasing efficacy.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	93

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development
801	Individual and Family Resource Management

Outcome #11

1. Outcome Measures

Individuals, families and employees who participate in Resource Management programming will report that they have used the knowledge/materials gained from the program to change behaviors related to targeted financial management goals. (Target expressed as a percentage of participants who reported making behavior change.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	45

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
806	Youth Development

Outcome #12

1. Outcome Measures

Information concerning Minnesota court orders establishing financial support for children of divorced parents will inform both policy-makers and Extension programming related to divorcing parents.

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Minnesota Legislature recently changed the state formula for child support from a percent of net income formula to a cost-shares formula. Minnesota is the only state to adopt a cost-shares formula and this has caused concerns for several stakeholder groups. New studies are needed to determine the effectiveness of the new formula for meeting the income needs of children.

What has been done

The research project reviewed 1,708 divorce court case records with reported gross incomes for both parents. Each case record had seven data collection forms that needed to be combined. The combination procedure was important because it included notes by the data collectors and this information revealed important understandings about the cases and provided more complete pictures of custody arrangements, child support orders, and the economic well-being of men, women and children within each family at the date of the divorce.

Results

The data analysis procedures in 2007 are contributing to a policy analysis of the state child support formula. Data from the project have been shared with the Minnesota Bar Association, Family Law Section, who is studying the effects of old and new formulas on particular types of child support cases.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #13

1. Outcome Measures

Studying the policies that support the labor force participation of rural low-income families will inform policy makers and Extension programing.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The stability of employment in rural American is a big issue. Assessing and maintaining employment is a particularly difficult challenge for low-income rural women. Not only do they have access to fewer employment opportunities, but they also have less access to other resources such as childcare, transportation, and physical and mental health services, which are vital to keeping and maintaining employment.

What has been done

As part of a multi-state research project, MAES researchers focused on the employment opportunities and constraints for rural women. They found that stable employment was the key to self-sufficiency. However, many rural, low-income mothers find remaining in the workforce to be challenging. In the study, only 16% of the mothers remained in the same job over a three-year period. Over 60% changed their employer or were employed on and off over time, and 23% were continuously unemployed.

Results

The factors associated with labor force participation were discussed with policy makers and educators to explain the barriers and pathways faced by low-income families. A University of Minnesota Extension project has used this research to add depth to a teaching curriculum for low-income families.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy

Brief Explanation

This program was challenged in 2007 to address credit and fiscal management in communities.The Family Resource Management programs responded to this demand in several ways:

1)It reached out to professionals who could strengthen financial literacy among their constituents.

2) It added a youth component of programming through a partnership with 4-H programs.As a result, we reached young adults we had not expected to reach.

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

1. Evaluation Studies Planned

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

Evaluation Results

Evaluation methods for Family Resource Management programs adapt to the nature of the program.Selected evaluation results of specific events and programs are below.

•In 2007 UMN Extension partnered with MN Credit Union Network to offer 14 full-day statewide High School Financial Planning Program workshops with teachers, credit union representatives and community agency staff.Of those, 250 completed post-workshop evaluations. Results indicate that most (82%) improved understanding of key concepts of money management.Nearly all respondents indicated the training helped them teach concepts to students (93%); that students will have better understanding of money management (96%); that they were better able to engage students (96%) and teach financial planning to students (94%). In terms of behavior change, 88% reported they would "definitely" use what they learned when teaching and 85% indicated they will use handouts provided. Based on the teachers and credit union reports, the materials would reach approximately 450 classrooms and reach 9-10,000 students across Minnesota. •In 2007, 194 individuals attended the Dollars Into Sense Program which teaches participants about establishing a spending plan, managing credit and saving.Fifty-nine individuals responded to a follow-up evaluation. Of those returning the survey, 92% reported increased ability to develop a spending plan; 90% reported better understanding of ways to save money.Since taking the class, 41% had developed specific financial goals; 46% developed a spending plan; 56% kept track of spending to find out how they spend money; 47% made a list of changes that could be made to save money; and 25% had obtained a copy of their credit report.

Key Items of Evaluation

The Dollars Into Sense Program conducted post-event evaluation that documented important behavior change. Individual behavior change has direct impact on the status of financial health in communities.Fifty-nine individuals responded to a follow-up evaluation. Of those returning the survey, 92% reported increased ability to develop a spending plan; 90% reported better understanding of ways to save money.Since taking the class, 41% had developed specific financial goals; 46% developed a spending plan; 56% kept track of spending to find out how they spend money; 47% made a list of changes that could be made to save money; and 25% had obtained a copy of their credit report.

As public policy considers approaches to prevent credit crises, the impact of financial literacy education could be considered.

Program #7

V(A). Planned Program (Summary)

1. Name of the Planned Program

Environmental Science Education

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
135	Aquatic and Terrestrial Wildlife	20%		0%	
136	Conservation of Biological Diversity	20%		0%	
903	Communication, Education, and Information Delivery	60%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	4.4	0.0	0.0	0.0
Actual	3.9	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
30047	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
165435	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
73355	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The 2007 program year was UMN Extension's second year of implementing the Minnesota Master Naturalist program.In its second year, the program mobilized 135 new volunteers who contributed over 5,055 volunteer hours in the areas of:1) natural resource management; 2) supporting nature-based centers; 3) engagement in natural science research program; and, 4) development of educational interpretive programs.The value of this volunteer service, according to IndependentSector.org is $191,877.54.The number of acres affected by these volunteers was 57,181, and Minnesota Master Naturalists have provided educational programming to over 40,000 citizens.

Programming for Native American youth on the White Earth Reservation will expand in the future as a result of grantsmanship in 2007.The National Science Foundation has invested $899,183 for the program through 2010.

2. Brief description of the target audience

Environmental Science Education programs reach:

•concerned citizens and volunteers who are willing to be trained and serve in a variety of roles as citizen teachers and scientists. •Minnesota professionals from within Extension, the Minnesota Department of Natural Resources, Soil and Water Conservation Districts, US Fish and Wildlife Services, Health and Human Services Departments, Environmental Sciences, the public schools and others involved in environmental science education programs.
•Youth on the White Earth Reservation in Northwest Minnesota.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	650	3000	200	4500
2007	560	4317	445	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Through training and other communications, volunteers, educators adn natural resource professionals will be prepared to deliver research-based environmental science education programs. (Measure expressed as number of Master Naturalists trained and supported.)

Year	Target	Actual
2007	265	249

Output #2

Output Measure

- White Earth Reservation youth will graduate from a four week summer program that includes environmental science education. (Target expressed as a percentage of students graduating.)

Year	Target	Actual
2007	75	85

Output #3

Output Measure

- Recruitment strategies for Environmental Science Education programs for adults will reach under-represented audiences. (Target expressed as a percentage of total audiences served.)

Year	Target	Actual
2007	10	15

Output #4

Output Measure

- All ESE modules and trainings will be developed, tested and finalized. (Target expressed as number of modules and trainings completed that year.)

Year	Target	Actual
2007	1	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Within a year of environmental science education instructor training (i.e., Master Naturalist and Best Practices for Field Day Trainings), educators and community-based instructors will use the research-based educational methods in environmental science education delivery. (Target expressed as a percentage of participants.)
2	Minnesotans will have increased opportunities to participate in natural history learning activities. (Target measure reflects increases in number of events available.)
3	Master Naturalists will become more knowledgeable about natural history. (Measure expressed as a percentage of knowledge gain.)
4	Native American youth will increase their academic performance on standardized achievement tests following the four week ESE program. (Target expressed as a percentage of increase.)

Outcome #1

1. Outcome Measures

Within a year of environmental science education instructor training (i.e., Master Naturalist and Best Practices for Field Day Trainings), educators and community-based instructors will use the research-based educational methods in environmental science education delivery. (Target expressed as a percentage of participants.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	140	90

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

It appears as though our quantitative target was not expressed as a percentage. 90% is the correct percentage.

4. Associated Knowledge Areas

KA Code	Knowledge Area
136	Conservation of Biological Diversity
903	Communication, Education, and Information Delivery

Outcome #2

1. Outcome Measures

Minnesotans will have increased opportunities to participate in natural history learning activities. (Target measure reflects increases in number of events available.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	50

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
903	Communication, Education, and Information Delivery

Outcome #3

1. Outcome Measures

Master Naturalists will become more knowledgeable about natural history. (Measure expressed as a percentage of knowledge gain.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	20	25

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
903	Communication, Education, and Information Delivery
136	Conservation of Biological Diversity

Outcome #4

1. Outcome Measures

Native American youth will increase their academic performance on standardized achievement tests following the four week ESE program. (Target expressed as a percentage of increase.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	5	7

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

A Terra Nova pre and post-test was administered. There was an 8.4% increase in math proficiency, and a 5.8% in science proficiency during the four week program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
136	Conservation of Biological Diversity
903	Communication, Education, and Information Delivery

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

The program continues to reach out to new populations, including offering scholarships to potential Master Naturalists.

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

1. Evaluation Studies Planned

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

Evaluation Results

Key Items of Evaluation

Program #8

V(A). Planned Program (Summary)

1. Name of the Planned Program

Water Resource Management and Policy

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water	35%		20%	
133	Pollution Prevention and Mitigation	35%		50%	
403	Waste Disposal, Recycling, and Reuse	20%		10%	
605	Natural Resource and Environmental Economics	10%		20%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	9.7	0.0	8.9	0.0
Actual	8.0	0.0	27.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
159280	0	14591	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
324060	0	1810487	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
21267	0	1616067	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

In 2007, two Extension Educators joined the Water Resource specialists who accomplished previously reported outcomes.Since May of 2007, these educators have provided decision-makers in communities with the information and skills they need to make environmentally sound land development and re-development decisions. Public awareness campaigns spread the word about how the public can improve the quality of water.Media relations efforts on aquatic invasive species issues reached an estimated 3.35 million people, and 27 articles appeared in national, state and local magazines or newspapers on water quality, shoreland and aquatic invasive species.

This year, the Minnesota Pollution Control Agency awarded Extension researchers a grant to expand research on Shoreland Erosion Control.This research will begin in fall of 2008.

MAES research reported this year has informed water resource managers and policy makers on ways to improve the quality of Minnesota's lakes, rivers and streams.

2. Brief description of the target audience

The new educators working in regions targeted local government officials,city planners, engineers, field staff and consultants.Forty-four (44) organizations sponsored Water Resource Management events -- including lake associations, Master Gardener Programs, higher education, Soil and Water Conservation Districts, Garden Clubs, Environmental nonprofit organizations and local government.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	11000	19500	2500	0
2007	16350	15558	630	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	1

Patents listed

Patent to use migratory pheromone to control invasive sea lamprey.

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	1	23	24

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Place useful information about shoreland management into multiple web links, printed products and media. (Target expressed as numbers of products created per year.)

Year	Target	Actual
2007	10	32

Output #2

Output Measure

- Workshops, seminars, and presentations will educate community members and professionals about strategies that provide wastewater treatment for their community at a reasonable cost in a way that is consistent with community values. (Target expressed as number of events.)

Year	Target	Actual
2007	125	84

Output #3

Output Measure

- Provide workshops on water quality, stormwater issues and shoreland management, revegetation and use of plants to maintain shoreland structures. (Target expressed as number of events.)

Year	Target	Actual
2007	30	48

Output #4

Output Measure

- Coordinate shoreland and wastewater treatment demonstration projects that provide hands-on learning opportunities and add to educational goals.

Year	Target	Actual
2007	8	3

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Residents will know: 1) Where stormwater goes; 2) Major stormwater pollutants and their impact and 3) Three things they can personally do to prevent pollution. (Measure expressed as percentage of residents in targeted communities.)
2	Targeted communities will create accessible, understandable and useful reports and protocols. (Target expressed as a percentage of targeted communities.)
3	Workshop participants will use information from shoreland education programming to provide education to 25 additional people, creating a multiplier effect. (Target expressed as a percentage of workshop participants.)
4	Shoreland education workshop participants will practice one or more of five lake/river friendly landscaping behaviors. (Target expressed as a percentage of workshop participants.)
5	Homeowners will modify or change their habits regarding home water and product use to better protect their onsite septic systems. (Measure expressed as a percentage of those evaluated.)
6	Small communities will develop a viable plan for onsite sewage treatment--plans that are affordable and address onsite sewage treatment. (Target expressed as number of communities per year.)
7	Research to control invasive fish species will support the health of Minnesota's native fish populations, as well as Minnesota lakes and rivers.
8	Research will develop the necessary information to inform rural communities ability to meet new U.S. drinking water quality standards.
9	Research will inform management decisions to improve stream and wetland habitat in Minnesota
10	Research on market-based environmental policy will provide options for local and state environmental policymakers to support water resource management.

Outcome #1

1. Outcome Measures

Residents will know: 1) Where stormwater goes; 2) Major stormwater pollutants and their impact and 3) Three things they can personally do to prevent pollution. (Measure expressed as percentage of residents in targeted communities.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	80	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

This outcome was not assessed this year because of a change in target audience and program outcomes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation

Outcome #2

1. Outcome Measures

Targeted communities will create accessible, understandable and useful reports and protocols. (Target expressed as a percentage of targeted communities.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	100	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse

Outcome #3

1. Outcome Measures

Workshop participants will use information from shoreland education programming to provide education to 25 additional people, creating a multiplier effect. (Target expressed as a percentage of workshop participants.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
111	Conservation and Efficient Use of Water

Outcome #4

1. Outcome Measures

Shoreland education workshop participants will practice one or more of five lake/river friendly landscaping behaviors. (Target expressed as a percentage of workshop participants.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	50

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
133	Pollution Prevention and Mitigation

Outcome #5

1. Outcome Measures
Homeowners will modify or change their habits regarding home water and product use to better protect their onsite septic systems. (Measure expressed as a percentage of those evaluated.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	60	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

This was not measured in 2007. Testimonials indicate that behavior changes include the purchase of front load washers, water softeners, and not using anti-biotic soaps.

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
111	Conservation and Efficient Use of Water

Outcome #6

1. Outcome Measures

Small communities will develop a viable plan for onsite sewage treatment--plans that are affordable and address onsite sewage treatment. (Target expressed as number of communities per year.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	3	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
403	Waste Disposal, Recycling, and Reuse
133	Pollution Prevention and Mitigation

Outcome #7

1. Outcome Measures

Research to control invasive fish species will support the health of Minnesota's native fish populations, as well as Minnesota lakes and rivers.

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Researchers in chemical ecology and fish biology focus on understanding aquatic organisms and fish. This is important to applied ecologists and managers who use this information to manage aquatic systems and invasive fish. Another audience that considers this work essential are governmental pollution control agencies concerned about nutrient release caused by invasive fish. A final important audience for this research are the Minnesota sport fishers, who enjoy Minnesota's natural resources from a boat, with a rod in hand.

What has been done

MAES research has significantly increased our knowledge of the natural world in ways that will improve quality of life. One part of this research has focused on the common carp, an extremely damaging invasive fish previously thought to be uncontrollable. Research has determined however, that this fish can be controlled. Research showed that this species commonly experience recruitment failure (its young fail to survive to adulthood) after severe winters, suggesting that carnivorous (game) fish might be used to control this species. Researchers have also found that the carp can be trained to swim to specific regions of the lake using chemical attractants where they might be netted.

Results

The researchers have found clear evidence that the species uses species-specific pheromones that can be isolated and concentrated. All of this progress has stimulated new applied research and public interest. In particular, the Mississippi River Basin chapter of the Aquatic Nuisance Species Task Force is instituting policy changes as a result of the dissemination of this research. Further impacts from another part of this research that was reported in last year's Federal Annual Report: this year a patent has been filed by the University of Minnesota and is now pending that uses a migratory pheromone the researchers discovered and identified to control invasive sea lamprey. Efforts are now underway to use this technology to control sea lamprey in the Great Lakes. A law was passed by the state legislature after testimony on this research that requires the Minnesota Pollution Control Administration to address the threats posed by endocrine disruption.

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
133	Pollution Prevention and Mitigation

Outcome #8

1. Outcome Measures

Research will develop the necessary information to inform rural communities ability to meet new U.S. drinking water quality standards.

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

An important concern is to what extent small rural communities will have the ability to meet new U.S. drinking water quality standards such as the 2001 standard for arsenic levels of 10 micrograms per liter.

What has been done

MAES researchers surveyed water users in rural Minnesota communities that had arsenic levels in their water supply exceeding 10 micrograms per liter during 2001-2006. The survey results showed that after obtaining complete information concerning the arsenic levels in their drinking water, consumers with relatively low levels of arsenic were willing to pay $8-$9 annually, while those with high levels of arsenic were willing to pay $15-$17 annually.

Results

The research showed that compared to compliance costs ($58-$327 annually) small rural communities were likely to find it difficult to cover the cost of compliance through increased water charges. If cheaper ways are not found to meet the new standards, some rural communities may have to cut other important investments in order to invest in materials and equipment to reduce arsenic levels. The research findings have been presented to public policy makers for informed decision-making.

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
133	Pollution Prevention and Mitigation

Outcome #9

1. Outcome Measures

Research will inform management decisions to improve stream and wetland habitat in Minnesota

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Minnesota's streams and wetlands are under pressure especially in areas of high development, such as growing suburbs.

What has been done

MAES researchers designed field-based sampling approaches that tested several ecological theories related to patterns of response of aquatic organisms to disturbances. In this initiative, stream ditching was used as the disturbance, taking advantage of an outdated management practice that, unfortunately, still prevails over large areas of stream and wetland habitat in Minnesota.

Results

Results from the research have already been critical to the Minnesota Pollution Control Agency as it seeks to evaluate the management options and implications for urban development around a specific high growth suburb of the Twin Cities. Focusing on one stream, Hardwood Creek, research provided targetable levels of Total Maximum Daily Loads (TMDL). As a consequence, the MPCA has taken steps to modify management strategies for the stream in general, and have established new precedents for managing total maximum daily loads of stress in stream systems. Precedents and new policies for surface water management resulting from this project may serve as a stimulus for broader review and revision of major sections of environmental and conservation laws related to ditching of aquatic habitats.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
133	Pollution Prevention and Mitigation

Outcome #10

1. Outcome Measures

Research on market-based environmental policy will provide options for local and state environmental policymakers to support water resource management.

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Vermillion River in the southern Twin Cities metropolitan area is one of the premier urban trout streams in the U.S. However, development pressure is causing its temperature to rise, which in turn threatens the trout population.

What has been done

MAES research has contributed to the creation of new knowledge of how best to design a temperature-trading program in the watershed. The primary challenges are incorporating advanced scientific information regarding land use, groundwater recharge, and surface water flow into a spatial model of thermal changes in the river. The economics of the problem require accounting for all of these changes so that a new development, which increases thermal loading into the river, can arrange offsetting activities, possibly off site, that mitigates thermal loading by an equal or greater amount.

Results

The policy that has resulted from this research is expected to be adopted in 2008. It will be the first of its kind that aims to control thermal runoff into an urban water stream. The results of this work are expected to lead to a program of temperature trading in the Vermillion River watershed, as a means of protecting a valuable trout fishery.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
605	Natural Resource and Environmental Economics

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Government Regulations
- Competing Public priorities

Brief Explanation

Some work was done to respond to septic issues during flooding and freezing.Extension was recently written into legislation to be the primary educator to work with small communities making wastewater decisions.

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

1. Evaluation Studies Planned

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

Evaluation Results

Key Items of Evaluation

Program #9

V(A). Planned Program (Summary)

1. Name of the Planned Program

Natural Resources Management and Utilization

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
123	Management and Sustainability of Forest Resources	50%		50%	
124	Urban Forestry	15%		15%	
125	Agroforestry	25%		25%	
133	Pollution Prevention and Mitigation	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	7.1	0.0	75.0	0.0
Actual	7.4	0.0	110.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
157110	0	414198	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
252601	0	5527123	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
80871	0	6905188	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

In 2007, Natural Resource Management programs utilized a variety of approaches to work with forest, land and business owners on behalf of green stewardship and product development.A new web site was launched in 2007 to give Extension a new way to connectregularly with Minnesota's family forest owners.The site averages about 240 page views by ninety different persons daily and is a central component of the program's new outreach strategy.This new product supplements the capacity of Extension's Natural Resource Management programs to work through government, citizens, entrepreneurs and landowners to protect the environment and secure its future.In addition, sixty Woodland Advisers educated landowners about the protection and use of forests.

Current issues are also addressed through NRMU programs.For example, new curriculum, media, outreach and assessments have worked to inform communities about the opportunity for carbon credit payments.A biomass programming series that began in 2006 has yielded results in three counties in informing communities about the potential for biomass energy production.

MAES researchers worked with natural resources managers, state and Federal agencies, as well as the forest products industry to maintain the quality of Minnesota's natural resources.Impacts reported this year are described under outcomes.

2. Brief description of the target audience

Primary audiences: Farmers and woodland owners, wood processors, volunteers, natural resource and green industry professionals, local units of government, parks and recreation departments, forestry departments, soil and water conservation districts and state agency personnel. Secondary audiences include investors, loggers and crop consultants.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	1750	30000	150	500
2007	1985	12210	1240	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	3	125	128

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Workshops will train landowners and volunteers in trees and woodlands topics. (Target expressed as number of events.)

Year	Target	Actual
2007	50	96

Output #2

Output Measure

- Through research demonstration projects and workshops, promote production, management and utilization of woody biomass and other domestic renewable energy sources. (Target expressed as number of events.)

Year	Target	Actual
2007	5	4

Output #3

Output Measure

- Master volunteer programs will prepare volunteers who commit time to care for their forest and share that knowledge with others. (Target expressed as numbers of volunteer hours generated each year.)

Year	Target	Actual
2007	3000	6064

Output #4

Output Measure

- Workshops for professionals will prepare those in the forestry and logging business with research-based information. (Target expressed as number of workshops available.)

Year	Target	Actual
2007	10	10

Output #5

Output Measure

- Learning opportunities will promote diversification of agricultural landscapes, including establishment of woody perennial crops for wellhead and water quality protection. (Target expressed as number of face-to-face interactions.)

Year	Target	Actual
2007	5	5

Output #6

Output Measure

- Print and digital publications will provide answers to questions about sustainable management of Minnesota's natural resources. (Target expressed as number of publications distributed.)

Year	Target	Actual
2007	1000	1525

Output #7

Output Measure

- Electronic commons will bring together natural resource businesses into internet-based learning communities that diversify local economies. (Target expressed as number of businesses that participate.)

Year	Target	Actual
2007	5	5

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Because of participation in Extension courses, urban forestry professionals and paraprofessionals will report having changed their tree care behaviors that promote healthy urban forests. (Target expressed as # of participants who report change.)
2	Informed land owners will manage a significant number of acres of Minnesota land effectively. (Target expressed as number of acres.)
3	Landowners, woodland owners and farmers will increase their planting of woody perennial and other crops to diversify their agricultural landscapes. (Target expressed as number of individuals who state an intention to diversify.)
4	Recycling of paper products will be assisted by the development of relevant paper industry technologies.
5	Conflict between stakeholder groups involved in natural resource management will be mitigated through integrated natural resource management research.

Outcome #1

1. Outcome Measures

Because of participation in Extension courses, urban forestry professionals and paraprofessionals will report having changed their tree care behaviors that promote healthy urban forests. (Target expressed as # of participants who report change.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	100	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

This goal was not measured this year. In 2008, different measures were chosen.

4. Associated Knowledge Areas

KA Code	Knowledge Area
125	Agroforestry

Outcome #2

1. Outcome Measures

Informed land owners will manage a significant number of acres of Minnesota land effectively. (Target expressed as number of acres.)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	60000	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

This goal was not measured this year. In 2008, different measures were chosen.

4. Associated Knowledge Areas

KA Code	Knowledge Area
124	Urban Forestry
133	Pollution Prevention and Mitigation
125	Agroforestry
123	Management and Sustainability of Forest Resources

Outcome #3

1. Outcome Measures

Landowners, woodland owners and farmers will increase their planting of woody perennial and other crops to diversify their agricultural landscapes. (Target expressed as number of individuals who state an intention to diversify.)

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	20	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In the mid-1980s, around 1.6 million acres of grasslands and wetlands were planted/restored in the mid-continental U.S. under the Conservation Reserve Program and similar state programs. Much of this land was, however, planted to a few non-native grasses or cultivars as a cost-effective means of protecting soil from erosion. While these programs initially were motivated by concerns over soil loss and water quality impairment, they soon became recognized as the first potential opportunity for landscape-scale habitat restoration worldwide.

What has been done

In 1988 MAES researchers initiated a longitudinal study in the southern prairie pothole region, the glaciated terrain in Minnesota and adjacent Iowa and South Dakota that once was a complex of tall grass prairie and freshwater wetlands, now predominantly corn. This study has tracked 64 restored wetlands and adjacent grasslands. The final survey was conducted in 2007.

Revegetation patterns over the first 12 years led the researchers to predict that many restorations were unlikely to continue to recovery, even though they are very dissimilar to their unaltered counterparts. The growth of a few aggressive species, including some that were deliberately planted, as well as the inefficiency of unplanted native species to immigrate from remnant natural areas appear to be primary factors contributing to stalled recovery.

Results

The results of this research has given researchers insights to aid in optimizing a network of restorations so plant species can migrate from their existing locations in remnant natural areas in response to climate change. In addition, researchers now better understand the extent to which certain species chosen to be the founding community can either help or hinder others from establishing. With increasing size of restoration, there is a tendency to introduce fewer species to launch the restoration, so developing an effective 'founder strategy' is crucial to large-scale restoration. The insights from this long-term study are being applied to a new large-scale restoration effort on the Upper Mississippi and Minnesota rivers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
125	Agroforestry

123	Management and Sustainability of Forest Resources

Outcome #4

1. Outcome Measures

Recycling of paper products will be assisted by the development of relevant paper industry technologies.

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Recycling paper products has increased as the potential impact of the volume of waste products on the environment is better understood. Water-based acrylic pressure sensitive adhesives are used in the paper industry, and making these soluble so that they can be recycled is of interest to all those involved in recycling.

What has been done

One MAES research study has been focused on discovering the technology and science necessary to produce environmentally benign pressure sensitive adhesives. Researchers have clearly identified which pressure sensitive adhesive and paper facestock properties govern the fragmentation of the adhesive.

Results

Researchers have given results of their research to the paper industry, providing clear strategies for making pressure sensitive labels for which the pressure sensitive adhesive is removed efficiently via unit operations used by paper recyclers. The findings have been used to design several new commercial products. Also the findings have been used to help promote initiatives at the state and federal level for mandates requiring recycling compatible formations to be used with paper products.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
133	Pollution Prevention and Mitigation

Outcome #5

1. Outcome Measures

Conflict between stakeholder groups involved in natural resource management will be mitigated through integrated natural resource management research.

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Prior to this MAES research on using stocking charts for ruffed grouse management, foresters were presented with an either/or scenario of either managing for trees (conifers) or managing for grouse habitat (aspen.)

What has been done

The stocking chart study shows that foresters can integrate management for ruffed grouse into management for conifer forests. That is a conceptual advance to forest wildlife management.

Results

The researchers work with many state and federal agencies and private stakeholders regarding forest wildlife habitat management is based on the concept of adaptive management. The processes that the research has developed to achieve changes in action by land management agencies has already resulted in a change in the way parties with conflicting interests are approaching their interaction with federal and state agencies.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Competing Programmatic Challenges

Brief Explanation

Due to competing programmatic challenges, measurement of outcomes in this area of expertise was not done.

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

1. Evaluation Studies Planned

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

Evaluation Results

Key Items of Evaluation

Program #10

V(A). Planned Program (Summary)

1. Name of the Planned Program

Housing Technology

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	100%		100%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	1.3	0.0	2.6	0.0
Actual	2.2	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
24400	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
57371	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1708	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The 2007-2008 catalog of trainings reached professionals in the field of housing, offering courses in the nature of radon and how to mitigate its effects.In 2007, 79 courses trained 672 housing professionals in techniques for mitigating radon in homes.The impact and outreach of this programs is accomplished through partnerships with organizations such as the Minnesota Department of Health, the WHO International Radon Project's Mitigation and Prevention Working Group, and the Midwest Universities Radon Consortium.

2. Brief description of the target audience

The overall target audience for this information this year remained builders, remodelers, contractors, mitigaters, real estate brokers and agents, lenders, inspectors, public health professionals and others involved with avoiding and resolving problems in homes.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	872	5700	0	0
2007	672	2414	0	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Educational courses will be delivered to the target audiences.

Year	Target	Actual
2007	65	79

Output #2

Output Measure

- New research will result in the development of new and revised educational materials. (Target expressed as the number of new or revised curriculum materials.)

Year	Target	Actual
2007	5	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Improve the durability of new homes by working with builders. (Target expressed as the number of new homes affected.)
2	Improve the availability of healthy and affordable housing through the mitigation of indoor environmental risks. (Target expressed as number of homes affected.)

Outcome #1

1. Outcome Measures

Improve the durability of new homes by working with builders. (Target expressed as the number of new homes affected.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	1000	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

This outcome was not measured in 2007.

4. Associated Knowledge Areas

KA Code	Knowledge Area
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #2

1. Outcome Measures

Improve the availability of healthy and affordable housing through the mitigation of indoor environmental risks. (Target expressed as number of homes affected.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	1000	1000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Other (Staffing changes)

Brief Explanation

Changes in the housing industry has decreased dramatically the demand for new housing.

A new educator, hired to work with builders, began in 2007 and is developing curriculum that will be used in future years. Therefore, no outcomes for builders happened in 2007.

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

1. Evaluation Studies Planned

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

Evaluation Results

Key Items of Evaluation

Program #11

V(A). Planned Program (Summary)

1. Name of the Planned Program

Food Safety Education

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	10%		60%	
503	Quality Maintenance in Storing and Marketing Food Products	45%		30%	
504	Home and Commercial Food Service	45%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	9.2	0.0	5.6	0.0
Actual	9.0	0.0	11.7	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
191829	0	179985	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
313989	0	847478	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
172311	0	664428	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

In 2007, the Food Safety team conducted 84 face-to-face and on-line courses that assured that service industries and others safely handled food, making use of the most recent research about food-borne illnesses.

Widespread availability at these targeted groups provide a great service to regulatory services that seek to minimize foodborne illness in Minnesota.The well-tested Food Safety program was used for a variety of important audiences in 2007, including:

-Volunteer and community settings such as churches, community hall and food stands.

-Spanish-speaking food service workers who learn through trained bilingual trainers,

-Food managers

-Food service workers needing certification or renewal

The team responds to emerging needs for education that supports food regulation.In 2004, the Minnesota Legislature passed what is referred to as the "Pickle Bill".This legislation requires that home processed foods intended for sale at farmer's markets or community events consist of either an acid food or an acidified food. This applies to pickles, vegetables or fruits.Workshops conducted in five locations taught 138 home food preservation entrepreneurs the requirements of the bill and all food safety content needed to comply with the requirements.

MAES research supported food safety in 2007 through several areas of work.Impacts reported this year include development of a tool for food companies to benchmark their food security, as well as continuing work on food shelf-life stability and measurement.

2. Brief description of the target audience

UMN research supports the food development industry and food processing industry while direct audiences of outreach efforts are volunteer and professional food service workers.Professional workers are engaged through relationships with the National Restaurant Association and collaboration with food safety regulation.Volunteer workers are reached through community-based connections that help us to reach entrepreneurs, fishermen, farmers and family. This year, the team targeted all businesses that were required to be compliant of new food safety regulation.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	1595	7400	0	0
2007	1630	50116	0	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	48	48

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- On-line and face-to-face classes will be delivered for food service workers in English. (Target expressed as number of courses offered.)

Year	Target	Actual
2007	58	84

Output #2

Output Measure

- Content for food service professionals will be translated into Spanish and adapted for Latino culture participants. (Target indicates number of courses available in Spanish.)

Year	Target	Actual
2007	3	2

Output #3

Output Measure

- Media distribution of food safety content areas will be disseminated on timely topics. (Target indicates number of new content releases distributed.)

Year	Target	Actual
2007	52	14

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	At the completion of each teaching session, participants will show increased knowledge of food safety as measured on the Life Skills evaluation. (Target expressed as a percentage of participants.)
2	At the completion of each teaching session, participants will identify behaviors they intend to change and follow up evaluations will determine whether these behaviors change. (Target expressed as number of behaviors changed / participant.)
3	The MN Dept. of Health reports an 18-20% decrease in inspection critical violations in establishments that employ a Certified Food Manager. Food Safety Education programs will certify food managers. (Target expressed as % of pass rates.)
4	Research will inform food companies decision-making related to food protection.

Outcome #1

1. Outcome Measures

At the completion of each teaching session, participants will show increased knowledge of food safety as measured on the Life Skills evaluation. (Target expressed as a percentage of participants.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	70	86

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Food Safety courses reach both professional food service workers who need certification, and food preparers who work in community settings that are not inspected by the department of health.

What has been done

Classes were conducted, and participants utilized a valid instrument, The Life Skills Evaluation Instrument, to measure knowledge and action changes.

Results

Knowledge gains included:

- an ability to evaluate food safety decisions.
- an ability to solve problems about food safety by looking at possible options.
- an ability to make safe food decisions.
- comfort level with sharing information on food safety with others.
- knowledge on the topic of food safety.
- understanding of current regulations regarding food safety.
- a determination to try new techniques in food safety.

4. Associated Knowledge Areas

KA Code	Knowledge Area
504	Home and Commercial Food Service
503	Quality Maintenance in Storing and Marketing Food Products

Outcome #2

1. Outcome Measures

At the completion of each teaching session, participants will identify behaviors they intend to change and follow up evaluations will determine whether these behaviors change. (Target expressed as number of behaviors changed / participant.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	2	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
504	Home and Commercial Food Service
503	Quality Maintenance in Storing and Marketing Food Products

Outcome #3

1. Outcome Measures
The MN Dept. of Health reports an 18-20% decrease in inspection critical violations in establishments that employ a Certified Food Manager. Food Safety Education programs will certify food managers. (Target expressed as % of pass rates.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	95	87

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The food service industry employs many workers who are not English speaking.

What has been done

Before Extension and its partners re-designed the ServSafe Spanish curriculum, only 40% of Spanish speakers passed. But since the new course was developed, significant competencies were gained.

Results

* 90% passed a pilot program in Rochester with an average score of 93.19%.
* 100% passed a recent metro-area series with an average score of 91.43%.
* 100% of participants say they have changed their work habits. Reported changes include more attention to proper hand washing, personal hygiene, cleaner facilities and increased attention to proper cooling of foods.
* 100% of participants say that they have shared what they learned with co-workers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products
504	Home and Commercial Food Service

Outcome #4

1. Outcome Measures

Research will inform food companies decision-making related to food protection.

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

National surveys of consumers regarding concern over food safety/defense have reveals a sharp decline (38%) in confidence in the safety of the U.S. food supply since July 2005.

What has been done

MAES researchers conducted a survey of food firm's practices.

Results

As a result of a three-year survey of food firms' practices related to food protection and defense, a diagnostic benchmarking tool has been created and placed on the Web for food companies (manufacturers, wholesalers, foodservice and retail food companies) to use to benchmark their food defense activities against other firms in their sector of the food supply chain.

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

The growing number of non-English speaking employees in the food industry requires new approaches to service delivery.

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

1. Evaluation Studies Planned

- Other (Economic Value Study)

Evaluation Results

Minnesota Department of Health staff report that there has been an 18 - 20% decrease in critical violations during health inspections of food service establishments since the Certified Food Manager requirement was adopted.

While food safety education is believed to be essential to the prevention of foodborne illness in the U.S, it is difficult to estimate how many cases of illness education prevents.Economic value is also difficult to estimate. The North Carolina State University Food Safety Education Specialist, Dr. Angela Fraser, has written a rationale and calculation for the economic value for food safety education programs for employees of food service establishments.The document references the National Restaurant Association which has estimated the average cost of a foodborne illness outbreak to an establishment at about $75,000.Food safety training is one way food service operators can proactively prevent such losses.In January through December, 2007, approximately 500 establishments were represented by our participants in ServSafe classes and on-line certification courses.Using the calculation of $75,000 multiplied by 500 establishments, the prevention value has an estimated economic value of over $37.5 million.

Key Items of Evaluation

The estimated average cost of a foodborne illness outbreak for a business is $75,000.In January through December, 2007, approximately 500 establishments were represented by our participants in ServSafe classes and on-line certification courses.Using the calculation of $75,000 multiplied by 500 establishments, the prevention value has an estimated economic value of over $37.5 million.

Program #12

V(A). Planned Program (Summary)

1. Name of the Planned Program

Commodity Crop Production

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		20%	
204	Plant Product Quality and Utility (Preharvest)	20%		20%	
205	Plant Management Systems	30%		20%	
206	Basic Plant Biology	10%		5%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%		10%	
212	Pathogens and Nematodes Affecting Plants	10%		10%	
213	Weeds Affecting Plants	10%		5%	
216	Integrated Pest Management Systems	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	11.9	0.0	98.2	0.0
Actual	11.4	0.0	149.9	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
262959	0	820564	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
419783	0	10721793	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
65686	0	11253797	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

In 2007, 690 events and many other consultations reached the commodity crop industry in 2007.Wide dissemination of information to targeted media provided research-based information on current topics to address dramatic changes and challenges in Minnesota's commodity crops industry this year.Over 50 media updates addressed bio-diesel byproducts, farm bill changes, organic farming, fluctuations in prices, the effects of drought on farm safety, carbon credits, diseases, global warming and more.Popular web sites include crops E-news and a site targeted at managers of pesticides.

Research focused on management systems for profitabiliy, control of pests and fungal diseases, development of crop varieties, and basic research in genomics. Some specific projects are reported under the outcomes section.Important progress in research on commodity crops in 2007 include:

•As as result of research on biological control of soybean aphid, permission was granted to release the Chinese parasitoid Binodoxys communis against the soybean aphid and releases began in the summer of 2007.These releases were the first-ever releases of an exotic soybean aphid parasitoid that was collected on soybean aphid in Asia in North America.The potential impact of these releases is a substantial decrease in the need for insecticide sprays against this pest. •Progress in nitrogen management in sugarbeet production has increased purity in the extraction process by 2% and reduced nitrogen applications over 120,000 acres by 30 pounds per acre. •Oat-maize addition lines allow the rapid mapping of maize DNA sequences to their respective chromosome.The lines have been distributed to approximately 70 research groups around the world and are being used in various gene mapping projects and many other applications. •To increase the diversity of rust resistance in barley, 318 Wild Barley Diversity Collection accessions from the Fertile Crescent, Central Asia, North Africa and the Caucasus region were evaluated for resistance to leaf rust and stem rust. The results indicate that wild barley is a rich source of rust resistance genes for cultivated barley improvement.

2. Brief description of the target audience

The primary audiences are the producers of corn, soybean, small grains and sugar beets. The secondary audience is the consultants who have commodity crop producers as their customers.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	36300	20000	0	0
2007	46967	25317	3260	0

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

Patent Applications Submitted

Year	Target
Plan:	3
2007 :	1

Patents listed

PVP for RB07--new hard red wheat variety

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	10	190	200

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Conduct regional and local events to provide producers with latest applied research for improved crop management. (Target expressed as number of events)

Year	Target	Actual
2007	100	690

Output #2

Output Measure

- On-farm research will be conducted and result in findings that will inform producers about best management practices.

Year	Target	Actual
2007	0	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Improve irrigation water use efficiency by having irrigating farmers use at least two irrigation water monitoring tools to support their irrigation water scheduling decisions. (Target expressed as percentage of farmers adopting tools)
2	At the completion of each training event, participants will show increased knowledge of appropriate crop technology production practices (Target expressed as a percentage of participants.)
3	Participants will gain research-based knowledge in crop and water management and workplace safety. (Target expressed as the number of direct person contacts reporting new research-based knowledge.
4	Participants will act on university-based research they learned. (Target expressed as the number of direct person contacts from meetings who acted on information associated with their Extension learning.)
5	Research on existing and emerging crop diseases will raise grower awareness on management strategies.

Outcome #1

1. Outcome Measures

Improve irrigation water use efficiency by having irrigating farmers use at least two irrigation water monitoring tools to support their irrigation water scheduling decisions. (Target expressed as percentage of farmers adopting tools)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	75	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

This measure was not evaluated in 2007.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

Outcome #2

1. Outcome Measures

At the completion of each training event, participants will show increased knowledge of appropriate crop technology production practices (Target expressed as a percentage of participants.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	78

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

This was not evaluated in 2007.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

Outcome #3

1. Outcome Measures

Participants will gain research-based knowledge in crop and water management and workplace safety. (Target expressed as the number of direct person contacts reporting new research-based knowledge.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	26345

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
206	Basic Plant Biology
201	Plant Genome, Genetics, and Genetic Mechanisms
213	Weeds Affecting Plants
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
216	Integrated Pest Management Systems
205	Plant Management Systems
204	Plant Product Quality and Utility (Preharvest)

Outcome #4

1. Outcome Measures

Participants will act on university-based research they learned. (Target expressed as the number of direct person contacts from meetings who acted on information associated with their Extension learning.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	10416

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
206	Basic Plant Biology
204	Plant Product Quality and Utility (Preharvest)
201	Plant Genome, Genetics, and Genetic Mechanisms
213	Weeds Affecting Plants
212	Pathogens and Nematodes Affecting Plants
205	Plant Management Systems
216	Integrated Pest Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants

Outcome #5

1. Outcome Measures
Research on existing and emerging crop diseases will raise grower awareness on management strategies.

2. Associated Institution Types

•1862 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In Minnesota, soybeans planted on 6.15 million acres in 2007 provided approximately 38% of farm income from crops. Soybeans have become increasingly important in central and northwestern Minnesota and have surpassed small grains in acreage because of diseases such as scab and Septoria leaf spot of small grains. Soybean diseases and soybean cyst nematode caused yield losses estimated at 12% statewide. These yield losses represent as much as $380 million in lost income for Minnesota soybean farmers at current prices.

What has been done

Research into the biology and ecology of soybean pathogens and varietal resistance and tolerance to these pathogens is leading to more effective methods of controlling soybean diseases. Research has developed soybean cultivars resistant to Phytophthora sojae, which is present in more than 50% of Minnesota soybean fields. Efforts since 2004 have increased grower awareness of the recent emergence of Sudden Death Syndrome as a yield limiting disease of soybean in Minnesota. A forecaster of soybean rust risk (MinnSoyRustMod) has been developed and accurately predicted the deposition of soybean rust spores in Minnesota.

Results

Materials with disease resistance are being incorporated into the soybean breeding programs. When the soybean risk forecaster is released it will alert soybean growers to conditions that require increased surveillance for infection by soybean rust and the possible need for fungicide application.

4. Associated Knowledge Areas

KA Code	Knowledge Area
206	Basic Plant Biology
212	Pathogens and Nematodes Affecting Plants
205	Plant Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy

Brief Explanation

The content of programming and outreach in 2007 responded to new public policy (e.g., carbon credits) and disasters that profoundly affected crops managers this year.

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

1. Evaluation Studies Planned

- Retrospective (post program)

Evaluation Results

An evaluation of the SE Minnesota research and demonstration program included responses from 499 farmers.The 2007 Pest Management Assessemnt showed that 47% of respondents regularly used University or independent research-based resources and website, over 34% using private industry resources.When asked what sources they valued most when selecting crop varieties, not surprisingly, 74% trusted their own past experience with those varieties.But second in importance (48%) was information from University or research-based variety trials.

Key Items of Evaluation

This evaluation showed that, as a result of Extension programming

•60% of respondents now keep more detailed field records. •53% have implemented more safety precautions when working with pesticides. •57% have increased the frequencyof crop monitoring and field scouting.

Program #13

V(A). Planned Program (Summary)

1. Name of the Planned Program

Community Economics

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
602	Business Management, Finance, and Taxation	20%		70%	
608	Community Resource Planning and Development	80%		30%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	8.1	0.0	6.5	0.0
Actual	12.2	0.0	9.3	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
200358	0	69597	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
587616	0	575119	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
676217	0	433080	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

In 2007, community economics educators and faculty delivered education and research assessments about economics and public finance.Through educational events and in-depth community studies, community leaders assess whether their community climate will grow their economy and their fiscal health. Extension is becoming a "go-to" resource to support decisions made for economic development, business development and public finance questions in communities. Evidence of this growing reputation comes from increased media requests and interest from local and state legislatures.

Ties continue to be strengthened between Extension and the Department of Applied Economics, the Department of Design, Housing, and Apparel, and the staff of the University of Minnesota Tourism Center. Research is transferred to Extension educators and is disseminated through a variety of web, publication and community-based education vehicles.

2. Brief description of the target audience

Primary audiences for community economics programs in 2007 include chambers of commerce, the tourism industry, economic development officers and local governments, and nonprofits that can, in turn, support local economic development efforts.

V(E). Planned Program (Outputs)

1. Standard output measures

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

Year	Direct Contacts Adults Target	Indirect Contacts Adults Target	Direct Contacts Youth Target	Indirect Contacts Youth Target
Plan	9000	8000	0	0
2007	10260	34292	0	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	3	22	25

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Educational workshops will be provided (face-to-face and on-line). (Target expressed as numbers of workshops.)

Year	Target	Actual
2007	180	234

Output #2

Output Measure

- Community-based research will be conducted regarding retail trade, business retention and expansion and tourism development. (Target expressed as numbers of communities engaged.)

Year	Target	Actual
2007	10	9

Output #3

Output Measure

- Community-based trainers will be trained to continue providing education in communities through business retention and expansion programming, customer service training and internet literacy programs. (Target expressed as the numbers of trainers trained.)

Year	Target	Actual
2007	80	107

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Participants will increase their knowledge related to topics having to do with community economics. (Target expresses the percentage of participants reporting increased knowledge.)
2	Communities will use education provided to develop plans for future economic development. (Target expressed as numbers of communities articulating plans.)
3	Communities will report that plans developed as a result of community economics programming were implemented to the betterment of their local economies. (Target expressed as number of communities reporting implemented plans.)
4	Communities engaged in long-term programs report increased community capacity to sustain growth and development. (Target expressed as percent of communities who have a majority of task force members responding that Community Economics programs built community capacity.)
5	Research on community and visitor benefits of Minnesota public lands will lead to better public management decisions and increased tourism.

Outcome #1

1. Outcome Measures

Participants will increase their knowledge related to topics having to do with community economics. (Target expresses the percentage of participants reporting increased knowledge.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	80	93

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Local businesses rely on local government, local customers and community culture to support their retention and expansion in the community.

What has been done

Educational events and assessments focused on: 1) communities' pull factors in their retail trade sector, 2) quality management of local festival and events; and 3) strategies to improve small store success in a big box economy. A retrospective pre-post survey design was used to measure knowledge gains.

Results

The 93% figure reported above represents the percentage of participants who improved their scores across all learning objectives. Average knowledge gains of all learning objectives for each program are:

Participants in Retail Trade Analysis programs improved their knowledge of the topic by 54.5%.
Participants in Festival and Event Management programs improved their knowledge of the topic by 53.4%.
Participants in Small Stores Success Strategies programs improved their knowledge by 28.6%.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation
608	Community Resource Planning and Development

Outcome #2

1. Outcome Measures

Communities will use education provided to develop plans for future economic development. (Target expressed as numbers of communities articulating plans.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	8	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Mobilizing community members can use community-based research to hear the concerns of business and plan to support businesses.

What has been done

Business Retention and Expansion programs convene local task forces to survey business needs. Research reports, informed by university faculty, make suggestions for local action.

This objective was reworded in the 2008-2012 plan of work to report more meaningful information. The new outcome target is: 'Participants in long-term programs will contribute to new plans for local economic development. (Target expressed as percentage of participants in long-term programs who report that participation in Community Economics programs led to creation of new plans.)'

Results

56.2% of participants in four long-term programs reported that the program helped establish new plans for economic development.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #3

1. Outcome Measures

Communities will report that plans developed as a result of community economics programming were implemented to the betterment of their local economies. (Target expressed as number of communities reporting implemented plans.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	5	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Local businesses rely on local government, local customers Community action that supports local business creates optimum opportunity for strong economies.

What has been done

Business Retention and Expansion programs convene local task forces to survey business needs and discuss strategic opportunities. Research reports, informed by university faculty, suggest strategies to create a business-friendly community. This outcome measure was restated in the 2008 - 2012 plan of work to extract more meaningful data. The new outcome measure is: 'Communities engaged in long-term programs will report that plans developed as a result of community economics programs were implemented to the betterment of their local economies.' A follow-up survey was conducted with task force members of Business Retention and Expansion program communities served over the past three years.

Results

Of the four communities surveyed, more than half of the respondents reported that BR&E programming led to improvement in the local economy. In a second community, 43% of respondents felt that BR&E projects led to economic improvement. In a third community, 29% of respondents felt that BR&E projects led to economic improvement. In a fourth community that had very recently completed the program, 14% felt that projects led to economic improvement.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #4

1. Outcome Measures

Communities engaged in long-term programs report increased community capacity to sustain growth and development. (Target expressed as percent of communities who have a majority of task force members responding that Community Economics programs built community capacity.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Local businesses rely on the capacity of local government, local customers and community culture to support their retention and expansion in the community.

What has been done

One to four years after Community Economics programs are completed, follow-up surveys later are conducted with key informants or task force members. In 2007, four communities were surveyed.

Results

Of four communities surveyed, three reported increased capacity to sustain growth and development. Three reported increased support of local businesses. Three reported that they had established a strategic plan for economic development. Two reported that the program helped solve immediate business concerns.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #5

1. Outcome Measures

Research on community and visitor benefits of Minnesota public lands will lead to better public management decisions and increased tourism.

2. Associated Institution Types

•1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Why Minnesotans choose to visit or not visit state parks is of utmost concern to the Division of Parks and Recreation and the the Minnesota DNR in general. Parks provide Minnesotans with experience opportunities that are critical to their mental and physical health. And yet, following national trends, visits to our state parks are declining.

What has been done

MAES researchers conducted two surveys to address declining numbers of visitors to Minnesota State parks. A survey was administered to a random sample of visitors across Minnesota's state park system. Then, a random sample of Minnesota households was drawn to conduct a general survey of Minnesotans to determine their perceptions of state parks. A series of focus groups were also held.

Results

Survey and focus group data are being used by the DNR to develop a marketing strategy that addresses the diversity of Minnesota's population and targets specific programs in state parks to increase visitation across all segments of the state's population. Research findings from studies supported by this project over the past five years are being translated into a web based tool box for use by federal land managing agencies, especially the U.S. Army corps of Engineers. The DNR has used the finding to drive the development of the Minnesota State Comprehensive Outdoor Recreation Plan.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

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

1. Evaluation Studies Planned

- Retrospective (post program)

Evaluation Results

Key Items of Evaluation

Program #14

V(A). Planned Program (Summary)

1. Name of the Planned Program

Nutrition Education Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
701	Nutrient Composition of Food	0%		80%	
703	Nutrition Education and Behavior	100%		20%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	17.5	0.0	23.4	0.0
Actual	15.3	0.0	15.6	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	277636	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
255245	0	1026915	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
6781454	0	972139	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

In 2007, EFNEP, FSNE and Extension 4-H health activities and sessions worked with a total of 71,125 individuals.Over17,000 Health and Nutrition program sessions were offered in nearly every corner of Minnesota. Of the total number of participants, 38% were adults and 62% were youth. Of the total number of participants, 80% were considered from underserved or underrepresented groups.Thirty-three percent (33%) were youth, and 30% were Minnesotans of color. The number of unduplicated participants rose by 14% from 2006.

Efforts included:

•Educational programs with individuals were held in group or one-to-one settings regarding diet quality, food safety, food resource management and food security; •Trainings for school food service personnel were developed throughout Minnesota;

•Research was conducted on the impact of nutrition education on children and the impact of access of food on families.

2. Brief description of the target audience

The Nutrition Education program area fulfills the requirements of federal legislation and funding, accepting into its programs children and families that meet thresholds of poverty.In addition, the program is reaching out to school food service workers who are both mandated and motivated to improve the health of school lunch diets.In 2007, new products provided these audiences easy information on, for example, how to help students increase their daily grain intake.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	70000	1400000	126000	67000
2007	27324	305470	43801	112781

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

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	1

Patents listed

To protect intellectual property of a novel finding that arose from probiotics genomic research: in respect to a broad spectrum lantibiotic (a type of anti-microbial protein)

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	39	39

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Classes will be provided in individual and group settings that teach about quality, food safety, food resource management and food security. (Target expressed as number of counties reached.)

Year	Target	Actual
2007	85	84

Output #2

Output Measure

- School Food Service Institutes will be held for school food service workers and managers so that they implement healthy food service programs for Minnesota's public schools. (Target expressed as number of institutes held each year.)

Year	Target	Actual
2007	4	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	An increased number of individuals will use research-based information from Extension to improve their intake of healthful foods. (Target expressed as percentage of participants who complete six or more lessons and self-report change.)
2	Food service personnel will use research-based information from Extension to improve students' healthy eating. (Target expressed as percentage of workshop participants reporting use of materials.)
3	Program participants will increase human nutrition knowledge. (Target expressed as percentage of participants who report knowledge change.)
4	Program participants will increase their skills in selecting and buying food that satisfies nutritional needs, managing food budgets and preparing affordable foods within the food groups. (Target expressed as percentage of participants who report learning these skills.)
5	Basic research will inform understanding of human nutrition and support healthful food choices.
6	Research will contribute to the scientific understanding of the benefits of whole grains.

Outcome #1

1. Outcome Measures

An increased number of individuals will use research-based information from Extension to improve their intake of healthful foods. (Target expressed as percentage of participants who complete six or more lessons and self-report change.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	73

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Adequate calcium intake as an adolescent is crucial to ensure bone health later in life. Yet, most older children and adolescents in the U.S. do not consume enough calcium from food and beverages to meet the recommended intake, and intake varies based on the race/ethnicity of the child.

What has been done

MAES researchers analyzed data from in depth interviews with about 200 parents of Asian, Hispanic, and non-Hispanic white early adolescents in 2007. Also in 2007, survey data were collected from 86 parent-child pairs in Minnesota through organized groups addressing youth issues such as 4-H Scouts and church groups.

Results

The results were used to develop a quantitative instrument to identify parental factors associated with calcium rich food intake of early adolescent children. Experiential learning activities were developed, tested and modified based on reactions from children. The lesson plans including these activities were shared with Extension staff working on Food Stamp Nutrition Education.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #2

1. Outcome Measures

Food service personnel will use research-based information from Extension to improve students' healthy eating. (Target expressed as percentage of workshop participants reporting use of materials.)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	40

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #3

1. Outcome Measures

Program participants will increase human nutrition knowledge. (Target expressed as percentage of participants who report knowledge change.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #4

1. Outcome Measures

Program participants will increase their skills in selecting and buying food that satisfies nutritional needs, managing food budgets and preparing affordable foods within the food groups. (Target expressed as percentage of participants who report learning these skills.)

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #5

1. Outcome Measures
Basic research will inform understanding of human nutrition and support healthful food choices.

2. Associated Institution Types

•1862 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

One out of five Americans has insulin resistance, an obesity-related disorder in which cells lose their ability to respond to their pancreas's prompting to absorb glucose from the bloodstream. Insulin resistance often leads to type 2 diabetes. As obesity is a growing problem in American, the incidence of insulin resistance and diabetes is growing too, with huge health implications.

What has been done

Research supported by MAES is helping to understand the link between obesity and insulin resistance by studying key molicules within fat cells. The starting point was the fact that type 2 diabetes often goes hand-in-hand with a condition within cells known as oxidative stress. Oxidative stress leads to the production of molecules known as reactive aldehydes that alter the structure of protein. Researchers found, using a technique they developed, that altered proteins were two to three times as common in the fat cells of overfed obese mice than in those of lean mice.

Results

The research has determined the nature of oxidation of an important protein involved in adipocyte fatty acid metabolism. This also suggests anti-oxidant foods may have a role in reducing the risk of developing this disease.

4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food

Outcome #6

1. Outcome Measures

Research will contribute to the scientific understanding of the benefits of whole grains.

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The role of food choices on human health is of increasing interest to both the food industry and medical professions, yet there is still not enough scientific information about food/disease interactions.

What has been done

Studies investigating the effects of whole grains on disease have been ongoing for several years. One study, completed in 2007, investigated the effect of whole and refined wheat on colon cancer risk in carcinogen-treated rats. The objective was to determine the effect of whole versus refined wheat of two different wheat classes--hard read and soft white--on the ability to reduce the risk of colon cancer.

Results

Interestingly, what was discovered was the characteristic of wheat that primarily influences its chemoprotective effect is the wheat class. Specifically, red wheat reduces colon cancer risk relative to white wheat, regardless of whether the wheat is whole wheat flour or refined flour. So the conventional thinking that whole wheat is superior to refined wheat was not supported by this research. It may be more important to promote red wheat, regardless of refining state, over white wheat, to reduce cancern risk.

4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Populations changes (immigration,new cultural groupings,etc.)
- Other (Changes in Extension evaluation procedures.)

Brief Explanation

Organizational changes have tightened the way Nutrition Education Programs counts participants. In the past, we've reported the full number of contacts made with each potential participant.Because it took an average of five contacts with an eligible family to recruit a participant, we counted each contact.The new evaluation director and program leader for the Nutrition Education Program have decided to count only the number recruited for the program.In this way, our participant count reflects an unduplicated count and a counting of only those Minnesotans for whom we know we've made a difference.

The poor condition of the economy made more Minnesotans income-eligible for Nutrition Education Programs.The number of unduplicated participants rose by 14% from 2006.

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

1. Evaluation Studies Planned

- Retrospective (post program)
- Before-After (before and after program)
- Time series (multiple points before and after program)
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Other (Surveys, observations, parent/teacher observations, interviews and journals.)

Evaluation Results

Evaluations are conducted with participants to assess outcomes consistent with the USDA Food and Nutrition Service emphasis on diet quality.In 2007, 33,851 individuals were evaluated.

Post diet quality nutrition education survey results indicate that 74% of youth, 73% of seniors and 70% of adults made at least one positive behavior changes related to diet quality. These behavior changes include improved intake of healthy foods; better management of food resources; improved chances for food security and improved behaviors related to food safety.

Key Items of Evaluation

Post diet quality nutrition education survey results indicate that 74% of youth, 73% of seniors and 70% of adults made at least one positive behavior changes related to diet quality. These behavior changes include improved intake of healthy foods; better management of food resources; improved chances for food security and improved behaviors related to food safety.

In addition to outcome evaluations, statewide focus groups explored how to better serve populations currently underserved.Families from Latino, African-American, Somali and White working poor communities were interviewed about their current understanding of nutrition, where they get information now, how to recruit members of their community, what nutrition topics they want to learn about, what educational strategies they like and how to retain program participants. The data are currently being analyzed to lead to program change for different-to-reach audiences.

Program #15

V(A). Planned Program (Summary)

1. Name of the Planned Program

Consumer Horticulture

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	20%		10%	
132	Weather and Climate	20%		10%	
205	Plant Management Systems	20%		60%	
211	Insects, Mites, and Other Arthropods Affecting Plants	20%		10%	
213	Weeds Affecting Plants	20%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	2.1	0.0	8.4	0.0
Actual	1.0	0.0	1.6	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	62785	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
90823	0	79558	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
238123	0	41334	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

This year, the Master Gardner program celebrated 30 years of being a trusted resource for Minnesota's gardeners. A widely disseminated newsletter provides information about current gardening perils, andthe volunteer program mobilizes Minnesotans to work in community to share research-based information.As a result, the program expands green space and social connections among community members.

In 2007, the Master Gardener program continued to conduct outreach to learn how to better reach Minnesotans underserved by the program.Urban gardening is just one way that Master Gardeners reach low-income and minority neighborhoods.

Two standout projects happened with the Urban Gardening program. 1)UMN Master Gardeners worked with Twin Cities Habitat for Humanity to help residents select grass seed and plants for their yards. Master Gardeners provided thesefirst-time homeowners and low-income families with basic gardening education. Volunteers provided guidance on seeding lawns, selecting plants for general landscaping, and more.2)A collaboration with Sabathani Center mobilized three of Extension's programs to help this low-income urban community plant gardens, understand the nutritional benefits of gardening, and nurture leadership within the participants attracted to the urban gardening program.

2. Brief description of the target audience

From the large group of horticultural information consumers, two distinct audiences have been selected be reached with specially designed programs. Audience #1 is people who need horticultural answers to questions and want a timely response. For this audience, we provide problem-specific information with as little "friction" as possible. Audience #2 is people who want to build, or whom we seek to build, basic knowledge in horticulture and environmental stewardship.For these audiences, there are opportunities for in-depth classes and/or longer-term educational experiences.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	66000	51000	5000	0
2007	124072	935411	5500	0

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

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	3	3

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Master Gardeners trained by Extension will deliver hours of educational service to the residents of Minnesota. (Target expressed as the number of volunteer hours committed by Master Gardeners.)

Year	Target	Actual
2007	65000	103346

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Minnesotans interested in horticulture will deepen their knowledge of horticulture content. (Target expressed as a percentage of persons reporting new knowledge.)
2	Minnesotans with answers to horticulture questions will act on university-based research. (Target expressed as percentage of users who report using the information.)

Outcome #1

1. Outcome Measures

Minnesotans interested in horticulture will deepen their knowledge of horticulture content. (Target expressed as a percentage of persons reporting new knowledge.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	75	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

This measure was not evaluated in 2007.

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
213	Weeds Affecting Plants
205	Plant Management Systems
102	Soil, Plant, Water, Nutrient Relationships

Outcome #2

1. Outcome Measures

Minnesotans with answers to horticulture questions will act on university-based research. (Target expressed as percentage of users who report using the information.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

This target was not studied in 2007. However, a significant outcome of Master Gardener action in 2007 is below.

Results

'Greening up' the city
Master gardener volunteers helped Tree Trust, a non-profit organization, distribute 1,000 trees to Minneapolis residents last spring. The trees were sold for $15 each to help repair some of the damage done by storms and Dutch elm disease.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
211	Insects, Mites, and Other Arthropods Affecting Plants
205	Plant Management Systems
213	Weeds Affecting Plants

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Competing Programmatic Challenges

Brief Explanation

The emerald ash borer infestation puts Minnesota's ash trees at great risk.Master Gardeners are working proactively on public awareness of prevention activities that can mitigate effects, or at least "buy time."

The disseminated educational model of the Master Gardner program -- with volunteers delivering educational content to interested community members -- makes tracking and evaluation of outputs and impacts difficult.In the coming years, the evaluation coordinator will work with the team to determine possible strategies to assure program accountability.

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

1. Evaluation Studies Planned

- Other (Benefits Study)

Evaluation Results

In 2006, a survey to determine perceived public benefits by four stakeholder groups was conducted.They were: 1) citizens in counties where Master Gardener programs worked; 2) County decision-makers; 3) Master Gardeners; and 4) Extension staff.Analysis of the data revealed eight benefits that were perceived consistently by each of the stakeholder groups.The eight benefits are:

•Master Gardener programs improve the natural environment through public education that leads to reduced yard waste, water runoff, pollution, and demands on waste management and landfill systems. •Master Gardener programs reduce the spread of hazardous plants, diseases, and insects through public education and consorted collaborative strategies. •Master Gardener programs increase the effectiveness of community public service organizations (such as Habitat for Humanity and farmers markets) by partnering with these organizations to broaden and strength their capacity around horticulture solutions. •Master Gardener programs increase the safety and health of Minnesotans through public education about appropriate use of pesticides. •Master Gardener programs increase the social, emotional, and cognitive abilities of children and youth by engaging them in horticulture through the Junior Master Gardener program, collaboration with schools, and other youth programs. •Master Gardener programs provide Minnesota’s vulnerable populations (such as children, elderly, and people with disabilities) with increased access to meaningful, multi-skill, community-focused activities. •Master Gardener programs increase Minnesotans’ access to University of Minnesota Extensionthrough its broad and continuous public presence and its referrals of public to other Extension services. •Master Gardener programs increase Minnesotans’ access to tax supported University of Minnesota research-based information.

Key Items of Evaluation

The public benefits study uncovered eight benefits commonly witnessed by four stakeholder groups.

Program #16

V(A). Planned Program (Summary)

1. Name of the Planned Program

Commercial Horticulture

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		20%	
204	Plant Product Quality and Utility (Preharvest)	40%		30%	
205	Plant Management Systems	40%		40%	
211	Insects, Mites, and Other Arthropods Affecting Plants	20%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	8.1	0.0	36.5	0.0
Actual	7.5	0.0	38.9	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
164408	0	413523	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
294925	0	3896255	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
28492	0	1882877	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

MAES horticultural research research informed the management decisions of public urban foresters.One example: researchers disseminated a publication on elm tree selection to the Minneapolis park board and to others involved with these trees.The information that the researchers have amassed on these plants has resulted in an increase in understanding of which trees are most appropriate for our climate and conditions, as well as a change in how these trees are maintained in the landscape.

Research was completed on alternative turfgrass species for low-input golf course fairways.The results of this research provide new knowledge that will benefit golf course superintendents throughout the northern U.S. Turf trial results indicated the usefulness of some species that are not currently used by most turfgrass managers in Minnesota.The tall fescue turf trials have performed well and turfgrass managers are beginning to increase the use of this drought-avoidant species.

The MAES chrysanthemum breeding program is recognized as one of the premiere public-sector chrysanthemum programs in the world.The program has created new chrysanthemum plants from large shrubs to small wave types. In 2007 a new, cold-tolerant gaura (named Snowstorm) has been released.

Three polyantha rose cultivars developed by MAES research have been named and were released to the public in 2007.Development of improved woody landscape plant cultivars hardy to USDA Plant Hardiness Zones 3/4 continues to provide a backbone for the upper midwest U.S. nursery and landscape industry.

MAES research has funded apiary research, the results of which were reported in last year's Annual Accomplishment Report.As a result of this work, a 2007 Extension activity in Commercial Horticulture was a project resulting from a grant to work with California bee breeders.California bee breeders rear and sell over half of the queen honey bees in nursery stock for the entire United States.The new initiative will help California breeders defend their businesses against diseases and mites.This will help beekeepers nationwide.Over two million bee colonies are owned by 250,000 beekeepers.

2. Brief description of the target audience

Commercial Horticulture audiences include fresh market producers such as new immigrant farmers, growers of fruits and vegetables for processing, the processing industry, associated agribusinesses turf professionals, nurseries and garden centers, and landscape professionals.

An important audience in 2007 was the 250,000 beekeepers who rear and sell queen honey bees.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	5000	18500	0	0
2007	22385	19155	135	0

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

Patent Applications Submitted

Year	Target
Plan:	3
2007 :	3

Patents listed

1. New garden chrysanthemum (MN Sel'n. 00-100-216)
2. New Wildung(MN 1797)apple, marketed under the trademark Snow Sweet apple
3. MN1914 apple, an early season selection

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	13	63	76

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Deliver workshops, classes and seminars and other events to provide information to targeted audiences.

Year	Target	Actual
2007	70	115

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Participants will gain knowledge in fruit and vegetable growing practices. (Target expressed as percentage of participants.)
2	Participants will report increased skills in plant care. (Target expressed as percentage of participants.)
3	Turf managers will have increased knowledge of phosphorous and fertilizer application (Target expressed as percentage of participants.
4	Program participants who participate in workshops and conferences will use skills to change their behaviors and increase their profit margins. (Target expressed as percentage of participants that significantly changed behaviors as a result of program workshops and conferences that had behavior objectives.)

Outcome #1

1. Outcome Measures

Participants will gain knowledge in fruit and vegetable growing practices. (Target expressed as percentage of participants.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	60	76

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

With the increasingly competitive international market, the growing demand for higher quality fruit by consumers, the strong pressure to reduce chemical use, and an ever increasing need to enhance the economic efficiency of production, tree-fruit growers must look to alternative management schemes of production. These practices must be economically and environmentally sustainable.

What has been done

Growers who want to stay profitable must establish high-density plantings with much smaller trees using new cultivars. These high-density plantings may cost 10 to 20 times more to establish than low-density plantings, thus greatly enhancing the economic risk. Potential returns of high-density plantings, however, far exceed those of low-density plantings, particularly during the first 10 years. The central component of high-density systems is the rootstock. Previous years' Annual Accomplishment Reports have discussed the success of MAES research in developing the kind of tree fruit varieties that are desired by consumers and hardy in Minnesota's climate, such as our popular variety (now named Minnesota's state apple by the Minnesota Legislature) Honeycrisp. Rootstalk trials with Minnesota apple breeding selection MN 1797, SnowSweet, has shown excellent tree growth. SnowSweet is a late cultivar. An early maturing new selection, Zestar! has also proven itself.

Results

Both SnowSweet and Zestar! are growing in name recognition and popularity, and chosen by growers to extend their apple season.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
204	Plant Product Quality and Utility (Preharvest)
211	Insects, Mites, and Other Arthropods Affecting Plants

Outcome #2

1. Outcome Measures

Participants will report increased skills in plant care. (Target expressed as percentage of participants.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	76

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
204	Plant Product Quality and Utility (Preharvest)
211	Insects, Mites, and Other Arthropods Affecting Plants
205	Plant Management Systems

Outcome #3

1. Outcome Measures
Turf managers will have increased knowledge of phosphorous and fertilizer application (Target expressed as percentage of participants.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	80

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
205	Plant Management Systems
204	Plant Product Quality and Utility (Preharvest)

Outcome #4

1. Outcome Measures

Program participants who participate in workshops and conferences will use skills to change their behaviors and increase their profit margins. (Target expressed as percentage of participants that significantly changed behaviors as a result of program workshops and conferences that had behavior objectives.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	70

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
204	Plant Product Quality and Utility (Preharvest)
211	Insects, Mites, and Other Arthropods Affecting Plants

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Competing Programmatic Challenges

Brief Explanation

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

1. Evaluation Studies Planned

- Other ()

Evaluation Results

Key Items of Evaluation

Program #17

V(A). Planned Program (Summary)

1. Name of the Planned Program

Livestock

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	10%		10%	
302	Nutrient Utilization in Animals	5%		10%	
304	Animal Genome	0%		5%	
305	Animal Physiological Processes	5%		10%	
306	Environmental Stress in Animals	20%		5%	
307	Animal Management Systems	30%		30%	
311	Animal Diseases	20%		25%	
315	Animal Welfare/Well-Being and Protection	10%		5%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	10.2	0.0	44.9	0.0
Actual	9.3	0.0	52.4	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
243474	0	1204746	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
392025	0	6889173	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
23067	0	4447963	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

UMN research and Extension is helping the livestock industry of Minnesota cope with issues of animal health, food security, and public safety in order to maintain public trust and productivity. National and international relationships are important to this program because of the global livestock markets and concern for global safety. In 2007, poultry specialists participated in planning efforts to develop a response to Avian Influenza and design a product movement strategy in the case of an avian influenza crisis.They also provided recommendations to improve production in niche poultry systems, resulting in better profitability and savings in expenses.Applied research has been conducted and disseminated regarding the use of distiller grains with solubles in turkey feeds, allowing producers to utilize higher levels of DDGS in light of increasing feed costs.

Similar collaborations has created an impact through the Quality Count$ project conducted by UMN dairy specialists since 2002.These efforts have improved SCC counts by 20% since 2003.

Similarly, the U of MN Beef Center led a statewide charge to increase awareness of Drug Residue Avoidance with beef and dairy producers.An independent research firm analyzing results showed that the team had successfully reached its audiences with updated information.

Research on dairy farm drug use has made it possible for Minnesota's dairy industry to lead the nation in safeguards for the quality and safety of milk and dairy products.Researchers have:

•Worked with the industry to identify areas most needing solutions; •Drafted policies defining the proper veterinary role in prescribing drugs on dairy farms; •Created a limited-access website for discussions within the profession; and •Developed protocols for therapeutic and production uses of drugs on dairies.

MAES research on the effects of feeding distillers grains on performance and carcass characteristics were used by university and industry professionals to debunk the myth that distillers grains negatively affects USDA grade of beef carcasses.

2. Brief description of the target audience

The livestock teams organize efforts throughout Minnesota to address current issues, including partnerships with national and international organizations, Minnesota dairy producers, pork producers, poultry producers, beef producers, veterinarians, consumers, Minnesota feed industry, forage growers and feeders, and commercial hay producers.

V(E). Planned Program (Outputs)

1. Standard output measures

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

Year	Direct Contacts Adults Target	Indirect Contacts Adults Target	Direct Contacts Youth Target	Indirect Contacts Youth Target
Plan	14600	3800	0	0
2007	37970	128218	2970	0

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

Patent Applications Submitted

Year	Target
Plan:	2
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	45	166	211

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Through demonstration projects, provide ideas and solutions to producers on such topics as milk house waste, manure rate application on fields, and on-farm demonstrations of forage topics such as alfalfa brown root rot variety screening, and alfalfa fall cutting. (Target expressed as number of demonstration projects.)

Year	Target	Actual
2007	20	0

Output #2

Output Measure

- Provide workshops, training sessions, schools, and other processor specific events. (Target expressed as number of events.)

Year	Target	Actual
2007	80	313

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Participants in Beef Home Study Course will report increase in knowledge in pasture management, nutrition, and stocker feeder management. (Target expressed as percentage of participants.)
2	Beef producers make management adjustments based on results of evaluation of their calves. (Target expressed as percentage of producers reporting making changes,)
3	Through the Quality Count$ program, the average bulk tank somatic cell count in Minnesota dairy operations will be reduced to below 300,000.
4	After attending manure management workshops participants will be able to complete a manure management plan that meets Minnesota Pollution Control Agency requirements. (Target expressed as percentage of participants.)
5	After completion of the on-farm assessment program which evaluates animal welfare for individual swine production sites, producers make changes in facility/equipment or management practices to improve swine welfare. (Target expressed as percentage of participants making changes.)
6	Participants will gain research-based knowledge in the production of livestock--including poultry, dairy, beef and swine, manure management,and workplace safety.(Target expressed as the number of direct person contacts reporting new research-based knowledge.)
7	Participants will change their behavior based on research-based knowledge about livestock management -- including poultry, dairy, beef and swine, manure management,and workplace safety.(Target expressed as the percentage of participants that changed their behavior as a result of workshops and conferences that had behavior objectives.)
8	Research on the manure management and methane digesters will develop options for Minnesota farms.

Outcome #1

1. Outcome Measures

Participants in Beef Home Study Course will report increase in knowledge in pasture management, nutrition, and stocker feeder management. (Target expressed as percentage of participants.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	60	84

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
305	Animal Physiological Processes
315	Animal Welfare/Well-Being and Protection
302	Nutrient Utilization in Animals
306	Environmental Stress in Animals
301	Reproductive Performance of Animals
311	Animal Diseases
307	Animal Management Systems

Outcome #2

1. Outcome Measures

Beef producers make management adjustments based on results of evaluation of their calves. (Target expressed as percentage of producers reporting making changes,)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	80

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
306	Environmental Stress in Animals
302	Nutrient Utilization in Animals
315	Animal Welfare/Well-Being and Protection
305	Animal Physiological Processes
301	Reproductive Performance of Animals
311	Animal Diseases
307	Animal Management Systems

Outcome #3

1. Outcome Measures

Through the Quality Count$ program, the average bulk tank somatic cell count in Minnesota dairy operations will be reduced to below 300,000.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	342000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The UMN dairy team continues to make an impact on the health and economic welfare of the dairy industry by working with dairy producers and partners. An ongoing effort increases dairy income by reducing somatic cell counts.

What has been done

Research, education, consultation and on-farm trials of techniques all combine to make a difference in SCC counts. As reported last year, the team's newest innovation -- worth disseminating -- replaces concrete with soft cow beds.

Results

Dramatic decreases early in the life of the project are becoming incremental decreases. Still, 2007's count decreased from 2006's cell count by 6% -- from an average of 361.38 in 2006 to 341.75 in 2007.

The QC Initiative started in 2003 and workshops to consultants and farms began in June 2003. Since then, the project has improved SCC 20% overall.

4. Associated Knowledge Areas

KA Code	Knowledge Area
306	Environmental Stress in Animals
311	Animal Diseases
307	Animal Management Systems

315	Animal Welfare/Well-Being and Protection
305	Animal Physiological Processes

Outcome #4

1. Outcome Measures

After attending manure management workshops participants will be able to complete a manure management plan that meets Minnesota Pollution Control Agency requirements. (Target expressed as percentage of participants.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	75	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Animal manure often contains antibiotics as a result of therapeutic and subtherapeutic use in livestock production. There is concern that dissolved antibiotics could potentially reach surface and ground waters, but actual research data is lacking.

What has been done

MAES funding supported a three-year study that quantified leaching and runoff losses of antibiotics from land application of liquid hog and solid beef manure under chisel plowing and no-tillage systems. Chlortelracycline was only detected in runoff, while monesin and tylosin were detected in both leachate and runoff. For all three antibiotics, greater than 90% of detections and 99% of losses occurred during the non-growing season, due to fall manure application and slow degradation of antibiotics at cold temperatures. During years of high snowmelt, runoff accounted for nearly 100% of antibiotic losses, whereas during years of minimal snowmelt, runoff accounted for approximately 40%. Antibiotic losses were generally higher from the no-tillage compared to chisel plow treatment.

Results

The results from this study suggest that small quantities of dissolved antiobiotics could potentially reach surface and ground waters in the Upper Midwest. The study further demonstrates the need for 1) spring application over fall application of manure, and also 2) injection or mixing of manure into the soil right after its aplication. Based on presentation of this antibiotic research to producers in Minnesota, some organic vegetable producers have changed their manure use practices.

Researchers are also part of the team invited by the Livestock and Poultry Environmental Learning Center in Nebraska to contribute their expertise to the development of a national web site on pharmaceuticals in animal agriculture. The Center is a national initiative funded by USDA to explore innovative methods to connect national experts on animal manure management issues and individuals who advise livestock producers on environmental issues.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
302	Nutrient Utilization in Animals

Outcome #5

1. Outcome Measures

After completion of the on-farm assessment program which evaluates animal welfare for individual swine production sites, producers make changes in facility/equipment or management practices to improve swine welfare. (Target expressed as percentage of participants making changes.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

This was not evaluated in 2007.

4. Associated Knowledge Areas

KA Code	Knowledge Area
315	Animal Welfare/Well-Being and Protection

Outcome #6

1. Outcome Measures

Participants will gain research-based knowledge in the production of livestock--including poultry, dairy, beef and swine, manure management,and workplace safety.(Target expressed as the number of direct person contacts reporting new research-based knowledge.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	1814

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
307	Animal Management Systems
311	Animal Diseases
301	Reproductive Performance of Animals
315	Animal Welfare/Well-Being and Protection
306	Environmental Stress in Animals
305	Animal Physiological Processes

Outcome #7

1. Outcome Measures

Participants will change their behavior based on research-based knowledge about livestock management -- including poultry, dairy, beef and swine, manure management,and workplace safety.(Target expressed as the percentage of participants that changed their behavior as a result of workshops and conferences that had behavior objectives.)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	61

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Substandard fertility, health, and survival of dairy cows are the most mentioned challenges of dairy producers today.

What has been done

Heterosis (hybrid vigor) has been used successfully by all other livestock species to improve reproductive capability, health and survival, or commercial production. MAES research has documented potential gains from crossbreeding of dairy cattle for improvement. Research has shown that JerseyxHolstein crossbreds were not significantly different from pure Holsteins for fat production. However, the JerseyxHolstein crossbreds had greater body condition scores and had 23 days fewer days open than pure Holsteins at first calving.

Results

Many dairy producers domestically and internationally have initiated crossbreeeding programs in their dairy herds based on the scientific recommendations from the results of this research project.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
311	Animal Diseases
315	Animal Welfare/Well-Being and Protection
306	Environmental Stress in Animals
307	Animal Management Systems
301	Reproductive Performance of Animals
305	Animal Physiological Processes

Outcome #8

1. Outcome Measures

Research on the manure management and methane digesters will develop options for Minnesota farms.

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Livestock farmers face two seemingly unrelated problems: one is livestock odor, another is the rising cost of energy inputs. It is possible that farm-based anaerobic digesters can make a significant contribution to U.S. energy security as well as help to minimize livestock odors. But more information is needed on the technology.

What has been done

MAES research has investigated digester costs and the potential for using biogas for on-farm heating. An economic feasibility assessment was also completed on a smaller-than-typical digester.

Results

A smaller than typical digester is now under construction on a 170 cow Minnesota dairy farm to evaluate a lower-cost design. To support another potential option, a spreadsheet decision tool was completed that addresses the potential for centralized digesters that would serve groups of small livestock operations that could not support digesters individually.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Competing Programmatic Challenges

Brief Explanation

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

1. Evaluation Studies Planned

- Other ()

Evaluation Results

Key Items of Evaluation