2011 Iowa State University Combined Research and Extension Annual Report of Accomplishments and Results

Status: Accepted

Date Accepted: 06/21/2012

I. Report Overview

1. Executive Summary

Agriculture in the state of Iowa has grown from traditional production of crops and livestock to encompass the revolution in the bioeconomy, life sciences, food sciences, value-added products, environmental sciences, and social sciences. Iowa's world-class endowment of natural resources, its highly skilled and educated people, and its well-developed infrastructure supports a diverse and dynamic set of food, feed, fiber, biofuels and bioproducts, environmental and community endeavors.

The Iowa State University (ISU) Combined Extension and Research Plan of Work for FY 2011 reflects what we anticipate is a final step in shifting to reporting under the five USDA priority areas, and is organized under nine broad, multidisciplinary programs:

- Youth Development
- Families: Expanding Human Potential
- Community and Economic Development
- **Global Food Security and Hunger**
- Natural Resources and Environmental Stewardship
- **Sustainable Energy** - Biofuels and Biobased Products
- **Food Safety**
- **Childhood Obesity** - Prevention
- **Climate Change**

We are no longer reporting on the program titled Ensuring Profitable Producers, and those activities and resources have, for the most part, been absorbed into Global Food Security and Hunger.

Research is conducted across most disciplines in agriculture, defined in its broadest sense, from basic to applied, to make advances in feed, food, fiber, and fuel production to help increase capacity and provide an adequate and nutritious food supply. The research expressed in the program areas is the result of cooperation among researchers within and between departments and colleges at all levels of activity.

Hatch and Smith-Lever formula grants provide critical funding for staffing that ultimately allows us to leverage and match other external funding sources. The formula grants also provide flexibility in programming to better meet current and emerging needs not being addressed by other sources of funding. Without these funds, there would be less applied research and less real world application of research, and less integration of Extension and research work.

Below find a sampling of programs that are supported by the formula grants and address the USDA priorities:

- **Food Safety**
  - Training and certification programs, e.g., ServSave®, HACCP, Pork Quality Assurance Plus (PQA+), and Transport Quality Assurance (TQA)
  - Nutrition education lessons (including a food safety component) for EFNEP and FNP recipients
  - Numerous in-state and multistate research projects
- **Global Food Security and Hunger**
  - Crop Advantage Series program and Crop Update newsletter
  - Numerous in-state and multistate research projects

- **Local Food Security and Hunger**
  - Lessons on food resource management for EFNEP and SNAP-Ed participants
  - Training volunteers to assist with SNAP (Food Assistance) applications
  - Homegrown Lifestyle
  - In-state and multistate research projects
- **Childhood Obesity**
  - Training developed for DHS childcare licensure renewal and Child and Adult Care Food Program certification
  - In-state and multistate research projects
- **Climate Change**
  - A number of in-state and multistate research projects
- **Sustainable Energy**
  - Bioenergy Bootcamp
  - A number of in-state and multistate research projects

Iowa State University also supports our stakeholders by providing, among other programs and activities too numerous to mention, the following:

- **Assistance to communities**
  - Iowa's Living Roadways Community Visioning Program
  - Iowans Walking Assessment Logistics Kit (I-WALK)
  - Buy Iowa Online
  - Community Vitality Center
- **Programs targeting and/or benefiting youth**
  - 4-H -- Connecting Learning and Living
  - Strengthening Families Program for Parents and Youth 10-14
  - PROSPER (Promoting School-community-university Partnerships to Enhance Resilience)
  - Family Storyteller Program
  - Better Kid Care New Staff Orientation (NSO)
  - Early Childhood Environment Rating Scale (ERS)
  - Children, Youth, and Families at Risk (CYFAR)
- **Programs for families and communities**
  - Family Development Certification Training
  - Powerful Tools for Caregivers
  - Volunteer Income Tax Assistance (VITA)
  - Horizons project
- **Programs addressing natural resources and the environment**
  - Manure Applicator Certification
  - Iowa Learning Farms
  - Numerous in-state and multistate research projects

Total Actual Amount of professional FTEs/SYs for this State

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	400.0	0.0	155.0	0.0
Actual	373.0	0.0	148.3	0.0

II. Merit Review Process

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

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

2. Brief Explanation

There has been no change in our review processes.

Merit review: ISU Extension and Outreach continued to monitor and adjust the plan of work in 2011 through use of self-directed work teams, continuous needs assessment, and ongoing work with public and private partnerships. At the state level, state staff worked closely with key statewide constituencies. Surveys of needs assessment were done at both the local and state level to inform selected plans. Iowa County Extension Councils and local stakeholder groups annually review, and prioritize needs, feeding the information back to the statewide plan of work teams. State POW merit review: North Central Regional Program Directors review plans across the region and are continuing to provide oversight, guidance, and course corrections on the logic models, which help guide the Plan of Work and report of accomplishments.

Scientific Peer Review: Project Proposals: Each project proposal is endorsed by the department chair and Associate Director of the Experiment Station. Each proposal is sent to peers internal to ISU (typically 2 to 4 faculty) for a thorough review of the scientific merit. Depending upon the reviews, the project is either approved, revised based on reviewer comments, or rejected.

III. Stakeholder Input

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

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

Brief explanation.

The majority of programs use media and the internet to announce public meetings and listening sessions, and use targeted invitations to traditional stakeholder groups and individuals. In addition, the various programs have employed the following:

• Random surveys of residents in specific communities are conducted to obtain feedback.
• Team members are in regular contact with primary stakeholders at meetings, electronically, and on an individual basis.
• Producers, suppliers, policy makers, and other interested parties are invited to state-wide web casts.
• End-of-meeting and post-program surveys consistently seek input for future research and programming needs.
• Responding to stakeholder input to encourage additional input.
• Identify existing stakeholder meetings, ask to be placed on the agenda, and ask stakeholders to answer questions or provide input.
• Many faculty and staff have developed relationships, one key to quality interaction with stakeholder groups, and are very active in participation at a variety of events where stakeholders are present and interact.
• Surveys, focus groups and on-going informal assessments attempt to match program delivery methods with the preferences of stakeholder groups. Decisions regarding content, delivery, and mechanisms to reduce barriers to participation are made with a goal of increasing participation.
• Blogs and other online venues gather comments on programming.

In the spring of 2010, ISU Extension and Outreach conducted a statewide needs assessment in addition to the traditional methods of securing stakeholder input (citizen advisory council meetings, county Extension council meetings). The findings provided information on current and potential users of ISU Extension and Outreach, their programmatic preferences, the educational delivery methods they prefer, and the words that come to mind when they think of Extension. Program development is being shaped by this needs assessment. Four focus groups were conducted also around the state with citizens interested in providing feedback on 4-H and Families work. 4-H urban strategic planning was conducted with partners for a full day in the fall. Finally, ANR breakfasts were conducted with a variety of stakeholders to garner information related to programming and program direction.

The 2011 Missouri River flooding resulted in increased listening sessions on programming needs with residents in western Iowa.

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

1. Method to identify individuals and groups

- Use Advisory Committees
- Use Internal Focus Groups
- Use External Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Surveys
- Other (Blogs)

Brief explanation.

The 2010 ISU Extension and Outreach statewide needs assessment survey was sent to a random sample of 6,000 citizens across the state. Intentional oversampling took place for underserved groups. Focus group participants were recruited by local hosts, urban 4-H partners were invited based on their involvement with youth work in Iowa's urban areas.

In addition:

• Formal advisory boards, by far the most common method employed, specifically invite representation from the organizations and agencies that work in a given area, and may also include producers nominated by extension field specialists, and representatives of the field specialists, campus specialists and campus researchers. A new citizens' advisory council for Families Extension was created.

• Web-based needs assessment and listening sessions are open to the public. Targeted groups are identified and contacted. Steering committees identify key individuals to ensure that the invitation list represents the broad spectrum of stakeholders.

• Use of developed mailing list or a random survey of current and potential clientele.

• External Focus groups include information from peer groups. Conduct needs assessments informally via routine contacts with target audience or formally via surveys.

• Extension state and field specialists serve on multiple county and state advisory committees where needs are identified and used to shape program efforts.

• Extension specialists acquired a very good knowledge, increased though hundreds of personal contacts, telephone calls, e-mail messages and blog comments received each year from potential clientele, of the individuals and groups that will have interest in their programs. Recommendations are also received from county-based Extension staff, campus faculty and staff, and commodity/producer organizations.

• Participants provide personal contacts that can be of service in our planning process; much attention is paid to major client groups and their boards of directors and other key influences. Suggestions from university administration are an excellent source of contributors also.

• Staff are members of coalitions and taskforces at the state and local level that continually review and check changing needs against operational plans.

• Meeting with representatives from state agencies regularly allows for input from consultants to districts throughout the state. Attendance at state and national meetings allow input from individuals, as do email contacts from the web site.

• Media and surveys are used to identify interested stakeholders. State staff hold conversations with individuals in more than 30 key state agencies and state organizations to share information and seek input.

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

1. Methods for collecting Stakeholder Input

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

Brief explanation.

In addition to the ongoing needs assessment of ISU Extension and Outreach stakeholders, a comprehensive needs assessment of Iowans was conducted in 2010 to get a representative sample of all Iowans over 18 years of age including an emphasis on engaging non-users of extension via a statistically designed survey. A parallel discussion was held via focus groups designed around topics and geographical regions. Once analyzed this information was shared with staff and is used in evaluating and adjusting existing programs. The results of this process are shaping planned programs.

There is greater emphasis on working with county extension councils to identify programming needs. Given their new responsibilities since the ISU Extension and Outreach reorganization, councils are being asked to provide ongoing needs assessment to help drive programming. A formal statewide needs assessment step-by-step process is being developed to help councils and campus needs assessment be more systematic and timely.

In addition:

- Meetings with traditional stakeholder groups and individuals are the most common method used.
- Listening sessions with current and potential clients were held.
- Conduct targeted and random surveys to current and potential clients.
- Contacts are ongoing by field staff, county extension staff, and state specialists who work with individual private sector partners.
- Meetings are held with professional associations and advisory boards, and other groups across the state, providing information and asking for input both on existing and emerging issues, and to assist in better understanding local needs.
- Select stakeholders are asked to serve on advisory boards, leadership councils and work teams to help set program direction, develop innovative programs to reach new audiences, and implement strategies to reach desired outcomes. The ISU Extension and Outreach Families unit initiated an advisory council of key stakeholders around the state to inform programming.
- Webinars share information and new program direction and receive input from stakeholders. Participants are often surveyed about needs and interests.
- The ISU Extension and Outreach Families unit conducted three focus groups with young adults to determine ways to better connect them with Extension resources.
- Participants are often asked to complete a survey at the beginning and end of training to assess their needs and how the training series can be improved, as well as a self-assessment to identify specific knowledge and skills participants gain from the training. This data is continuously reviewed to modify the training as appropriate. Follow-up surveys sometimes occur, and website contacts for information are provided.
- ISU Extension and Outreach state and field specialists serve on multiple county and state advisory committees where needs are identified. ISU Extension and Outreach staff use this information to shape program efforts.
- Personal contacts initiated by the stakeholders with research and extension/outreach faculty and staff.
- One-on-one interaction, surveys from clients at public meetings, discussions with advisory board members, e-mail communication including responses to Web and other media.
- Surveys allow those unable to attend meetings to voice opinions about needs and program planning processes. Follow-up meetings with select individuals providing 'missing voices' are conducted to gather broad-based input.
- Each community determines how they collect input, utilizing a variety of methods, including personal conversations, web surveys, speaking to individuals and groups, and work with the media.

3. A statement of how the input will be 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.

Results from the stakeholder input venues were triangulated and used to shape current and future programming. For example, ISU Extension and Outreach to families is developing three new initiatives based on the survey and focus group input (midlife and beyond, reaching underserved families, family-environment connect).

There has been no change in how stakeholder input is used. Programs continue to shift to address needs expressed by stakeholders, to the extent possible given current budgetary and staffing constraints.

• Based on input from stakeholders, Latino communities and businesses and urban audiences are a focus.
• To better communicate Extension programming to the public, we created the Program Builder Web site that lists all the programs offered by Community and Economic Development
• Priority programs have been identified to focus program delivery in high need subjects.
• Staffing decisions are based heavily on needs expressed by stakeholders. Stakeholders are members of some staff search committees.
• Stakeholders are used as sources of ideas and for identification of emerging issues. They also react to potential courses of action, research, and educational programs. Stakeholders are influential in creating the multi-year program of work. Information gathered from stakeholders is used in making decisions on program planning and directions to go with special projects such as research or grant projects.
• Information was used to assess staff and volunteer training needs and develop training plans; develop effective strategies to reach program outcomes; assess effectiveness of training programs and progress towards program goals; review program policy and clarify policy interpretations; and review and revise plan of work goals and planned implementation strategies.
• Stakeholders helped determine program direction, assisted with development of innovative programs to reach new audiences, and helped implement strategies to reach desired program outcomes.
• Evaluation surveys following webinars were compiled and information was use to clarify policy interpretation and plan future webinars to share program information.
• Input from stakeholders resulted in new program offerings
• Stakeholder input was used to determine the subject matter content of the educational programs, time and place of public meetings, mass media utilized, and the formatting and design of decision aids.
• Input from stakeholders, was used to direct the activities targeted towards each of the major client groups. This includes the amount of funds and other resources to dedicate to each activity and the priority each is given. Furthermore, the programmatic content of each major POW activity was greatly impacted by the input from our stakeholder groups.

• We have used this input to bolster programming in financial education and to expand our work with limited resource audiences.

Brief Explanation of what you learned from your Stakeholders

Programs continue to shift to address many of the needs expressed by stakeholders, who tell us:

• ISU Extension and Outreach is being used by one third of the Iowa population.
• All programming topics were rated as important.
• Support for 4-H youth work was rated highly in all focus groups.
• 4-H and Families focus groups supported new partnerships for family and youth development and suggested we continue strong partnerships with schools.
• 4-H and Families focus groups supported a strong emphasis on food preservation.
• Continue to increase the use of technology such as webcasts, webinars, interactive web sites, blogging, ask the expert, etc. especially for audiences 20-40 years old.
• Risk management for agricultural producers is an increasing concern given the higher input costs in crop and livestock production and growing market volatility.
• The next generation of farmers continues to be a concern for agricultural stakeholders. How will young farmers get a start with in land and input costs and high risk?
• Increased interest in "local foods" often from non-traditional audiences such as new-Iowans and people that did not come from a farm background.
• Increased concern from agricultural producers and agribusiness about increasing regulation of their business, particularly in the area of environmental regulations.
• Increasing concern about the influence on activists that are opposed to modern agricultural production practices such as GMOs, confinement livestock, animal agriculture, synthetic fertilizers.
• Establish leadership in precision agriculture and robotics research.
• Clean water is a top priority for Iowa.
• Develop or identify a third crop for Iowa.
• Develop inbreds and varieties with greater cold tolerances that can compete with colder no-till soils and cover crops.
• Set a high priority for biobased and solar-based research and implementation of methods to reduce consumption of fossil fuels.
• Take advantage of a biorenewable energy opportunity for state; include providing science-based information to policy-makers.
• Need research that meets sustainability, defined as maintaining our soil and water without compromising future generations' ability to meet their needs.
• Keep on the cutting edge of animal production research that demonstrates appropriate animal care and welfare; disseminate research results to both producers and consumers; and be willing to counter misleading or nonscientific information.
• Provide ongoing assistance to livestock producers in implementation of sustainable practices.
• Provide timely information and advice for producers facing tough economic times.
• Embrace sustainability and life cycle analysis principles, and transfer this knowledge to industry to enable decision-making.
• Conduct research that focuses on problem-solving for industry.
• There is increased interest in and need for programming in financial literacy education, particularly how to manage during these tough times. Due to challenging economic times, there is interest in a return to the basics, simplicity, getting the most for the nutrition dollar, gardening, preservation. Also increased interest in sustainability education, which relates to "leaning our lives".
• Alleviate poverty in Iowa and identify and implement strategies for helping families earn, keep and grow their money.
• Availability and access to safe, nutritious food is a challenge in many rural, Iowa communities,

with 'food deserts' existing in rural locations throughout the state.

• Parents, especially those experiencing poverty and those who have children with special needs, are interested in trying to meet such basic needs as basic understanding of child development and how to interact with their children to promote development, guiding children in developmentally appropriate ways, and strengthening family communication skills. Latino and African American parents have specific needs.

• Child care administrators need and value effective education opportunities that involve coaching and leadership. Peer learning and peer coaching opportunities were well received. Training that offered time for development of detailed action and implementation plans were considered very effective. Early care and education professionals desire credit based educational opportunities that can be tailored to meet their specific needs.

• There is a need for a more organized statewide approach to identifying, recruiting, and managing 4-H volunteers to expand extension resources.

• New families involved with 4-H and youth programs need more support and mentoring.

• Today's youth want vibrant, highly interactive, subject matter programs that interface web technologies with friends and caring adults.

• Volunteers for the 4-H program feel that their volunteer experience has direct benefits to youth and themselves. They feel the 4-H program has influenced their lives by allowing them to learn more about youth, giving them the chance to feel valued, increasing their organizational, public speaking and leadership skills, and increasing their connection to the community.

• A new generation of educational materials and programming are needed on farm energy conservation and efficiency.

• All citizens need to understand agriculture's capacity and role in producing food, feed, fiber, and fuel.

• Agricultural producers need to continue their development of risk management skills.

• The Small Meat Processors Working Group identified needs, resulting in 1) Meat Processors Resource Guide Book. 2) Local, area, and convention training sessions on business sustainability. 3) Extension has broadened the scope of their interaction with meat processors to include issues of business development and sustainability.

• Programs and educational opportunities needed to be implemented in Western Iowa to address needs of residents experiencing impacts of the flooding of the Missouri River.

• Update Extension websites to meet the needs of young adults.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
9273813	0	7626683	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	6159906	0	6877138	0
Actual Matching	6159906	0	6877138	0
Actual All Other	11597430	0	51036157	0
Total Actual Expended	23917242	0	64790433	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	1962240	0	6557199	0

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Iowa 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
806	Youth Development	100%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	45.0	0.0	0.0	0.0
Actual Paid Professional	47.0	0.0	0.0	0.0
Actual Volunteer	410.0	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
561788	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
561788	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
2925803	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

4-H Afterschool

- 141 Extension staff, 237 after-school staff, and 578 volunteers trained in youth development principles, practices, and 4-H curricula
- 15,928 children and youth K-12 engaged in 4-H Afterschool programming
- 40 4-H Afterschool Clubs developed statewide
- 625 4-H Afterschool community partners
- Provided technical assistance to afterschool professionals via the Iowa Afterschool Alliance
- Formed Clover Kids Action Team to support statewide Clover Kids (K-3) programming

4-H Youth Science

- 1547 educators, Extension staff, and volunteers trained to utilize science curriculum and implement youth science programs
- 550 students participated in the Iowa State Science & Technology Fair
- 18 new science clubs (funded by a Cargill grant) formed reaching over 200 youth new to 4-H
- CYSTEM website (http://ags.gis.iastate.edu/cystem) initiated to connect youth interested in science with local mentors, programs, and careers

Service Learning

- Secured NCVS grant of $500,000 to implement Reach Out Iowa (ROI)
- Conducted 271 training sessions for 2500 volunteers
- Provided over $75,000 to communities to support 60 service learning projects
- 2366 youth participants partnered with community volunteers benefitting 7028 Iowans

4-H Volunteer Development

- 3758 volunteers trained in youth development principles and practices
- 8193 adult volunteers assisted in the implementation of youth development programs
- 117 volunteers attended state level training planned and implemented by volunteers
- 53 staff participated in Everyone Ready; on-line volunteerism professional development program
- 17 volunteers, 4 teens, and 6 staff members participated in the North Central Region Volunteer Forum

Program Evaluation/Research

- Iowa 4-H Campus Census Survey
  - Demonstrate scope of 4-H influence on ISU campus
  - Obtain contact information for campus-based 4-H alumni
  - Increase 4-H Program's campus-based volunteer pool
  - Broaden 4-H partnerships for marketing, research, and subject area expertise
- Reach Out Iowa (ROI)-Service Learning: Youth Participant, Recipient Surveys and Focus Groups
  - Evaluation of training for leaders of service learning projects
  - Survey youth participants in ROI activities
  - Survey ROI recipient organizations
  - Focus groups of adults and youth involved in ROI projects
- Iowa 4-H Program Evaluation and Research Project: Anticipated Outcomes
  - Illustrate effectiveness of Iowa 4-H programming to assist young people in gaining and demonstrating life skills in content areas of citizenship, leadership, communication, and learning
  - Demonstrate breadth of positive 4-H impact in the lives of youth engaged in 4-H clubs
  - Identify areas in need of program strengthening
- (Multi-state: NCERA215) Contribution of 4-H Participation to the Development of Social Capital within Communities Research Study: Anticipated Outcomes
  - Results benefit individual 4 H programs to plan, deliver, and evaluate programs

- Findings demonstrate importance of 4 H to the overall health of the community
- Extension specialists use results in facilitating successful community change efforts
- Identify 4 H program practices and structures that contribute to networking and development of social capital

2. Brief description of the target audience

The target audience for Iowa 4-H youth programs are Iowa youth in grades K-12. Additional audiences are adult and youth 4-H program volunteers, Extension educators, Iowa K-12 grade teachers, pre-service educators, youth workers in community and private organizations that serve youth audiences, and community and state youth development collaborations.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	7436	50669	94583	19577

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	1	0	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of youth who retain membership in 4-H clubs after 1 year of membership

Year	Actual
2011	4049

Output #2

Output Measure

- Number of volunteers completing two trainings/yr
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of youth who participate in 4-H Afterschool
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Number of local partnerships initiated or strengthened
  Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Number of new clubs developed using innovative and emerging 4-H club models

Year	Actual
2011	92

Output #6

Output Measure

- Number of children and youth who participate in 4-H afterschool.

Year	Actual
2011	15928

Output #7

Output Measure

- Number of volunteers completing one training per year

Year	Actual
2011	3758

Output #8

Output Measure

- Number of 4-H partnerships initiated or strengthened

Year	Actual
2011	3322

Output #9

Output Measure

- Number of 4-H livestock exhibitors certified in Food Safety and Quality Assurance (FSQA)

Year	Actual
2011	10019

Output #10

Output Measure

- Number of 4-H'ers enrolled in Foods, Nutrition, Physical Health, and Fitness project areas.

Year	Actual
2011	45266

Output #11

Output Measure

- Number of pre-service teachers and educators trained in Connecting Learning and Living Curricula on connecting youth with MyPyramid concepts and understanding the origins of food.

Year	Actual
2011	246

Output #12

Output Measure

- Number of youth reached by educators trained in Connecting Learning and Living Curricula (agriculture, environmental, food, and nutrition emphasis).

Year	Actual
2011	7739

Output #13

Output Measure

- Number of youth and adults trained using climate curricula

Year	Actual
2011	1232

Output #14

Output Measure

- Number of youth and adults trained using sustainable energy curricula

Year	Actual
2011	1326

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Communication: Percentage of youth who participate in a 4-H experience will self-report a 1-point increase in skills or knowledge in the content areas of writing a speech/presentation, delivering a speech/presentation, developing supportive visuals, recognizing and utilizing active listening skills, asking clarifying questions, sharing ideas, communicating non-verbal messages and expressing feelings appropriately.
2	Communication: Percentage of youth who participate in a 4-H experience will self-report that they practice effective communication skills in sending and receiving written, visual and oral messages.
3	Citizenship: Percentage of youth who participate in a 4-H experience will self report a 1-point increase in skills or knowledge in the content areas of practicing good character, planning and organizing service learning events, and actively engaging in local, state and national issues.
4	Citizenship: Percentage of youth who participate in a 4-H experience will self-report that they demonstration good character traits, service learning, planning and organizational skills, and engagement in community issues.
5	Leadership: Percentage of youth who participate in a 4-H experience will self report a 1 point increase in skills or knowledge in the content areas of setting goals, working cooperatively in a team, communication effectively, and making decisions based on data and the opinions of others, honoring individuals differences and handling conflict.
6	Leadership: Percentage of youth who participate in a 4-H experience will self report that they demonstrate the ability to influence and support others in a positive manner for a common goal.
7	Percentage of pre-service teachers and educators who participate in Connecting Learning and Living (CLL) training will self-report a 1 to 3-point increase in confidence/knowledge in teaching MyPyramid concepts and the origins of food.
8	As reported by educators, percentage of youth participating in Connecting Learning and Living (CLL) lessons who increased their knowledge of the MyPyramid and making healthy food choices.
9	As reported by educators, percentage of youth participating in Connecting Learning and Living (CLL) lessons who made healthy food choices; tried new foods; and made healthier food choices during snacks, lunch, and class parties.
10	As reported by educators, percentage of youth participating in Connecting Learning and Living (CLL) lessons who increased their knowledge regarding growing food from plants.
11	As reported by educators, percentage of youth gardeners participating in Connecting Learning and Living (CLL) lessons who improve their vegetable consumption.
12	Percentage of 4-H'ers in grades 6-12 taking the Food Safety and Quality Assurance (FSQA) certification test who self-report improved techniques and practices in livestock record keeping, medications, food product safety, and ethics.
13	Percentage of youth who took the Youth Engagement, Attitudes, and Knowledge Survey (YEAK) who reported intention to pursue science, engineering, or technology related careers.
14	As reported by youth, 50% of youth will increase civic engagement knowledge and intent to engage in service in their communities.

Outcome #1

1. **Outcome Measures**

Communication: Percentage of youth who participate in a 4-H experience will self-report a 1-point increase in skills or knowledge in the content areas of writing a speech/presentation, delivering a speech/presentation, developing supportive visuals, recognizing and utilizing active listening skills, asking clarifying questions, sharing ideas, communicating non-verbal messages and expressing feelings appropriately.

Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

Communication: Percentage of youth who participate in a 4-H experience will self-report that they practice effective communication skills in sending and receiving written, visual and oral messages.

Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

Citizenship: Percentage of youth who participate in a 4-H experience will self report a 1-point increase in skills or knowledge in the content areas of practicing good character, planning and organizing service learning events, and actively engaging in local, state and national issues.

Not Reporting on this Outcome Measure

Outcome #4

1. **Outcome Measures**

Citizenship: Percentage of youth who participate in a 4-H experience will self-report that they demonstration good character traits, service learning, planning and organizational skills, and engagement in community issues.

Not Reporting on this Outcome Measure

Outcome #5

1. **Outcome Measures**

Leadership: Percentage of youth who participate in a 4-H experience will self report a 1 point increase in skills or knowledge in the content areas of setting goals, working cooperatively in a team, communication effectively, and making decisions based on data and the opinions of others, honoring individuals differences and handling conflict.

Not Reporting on this Outcome Measure

Outcome #6

1. **Outcome Measures**

Leadership: Percentage of youth who participate in a 4-H experience will self report that they demonstrate the ability to influence and support others in a positive manner for a common goal.

Not Reporting on this Outcome Measure

Outcome #7

1. **Outcome Measures**

Percentage of pre-service teachers and educators who participate in Connecting Learning and Living (CLL) training will self-report a 1 to 3-point increase in confidence/knowledge in teaching MyPyramid concepts and the origins of food.

2. **Associated Institution Types**

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	52

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Iowa ranks 15th highest in obesity/overweight prevalence and is in the bottom 10% of fruit and vegetable consumption in the United States. Youth ages 8 to 18 sit in front of a screen for an average of 7 hours and 23 minutes each day and prefer being indoors rather than going outdoors. Youth and adults are disconnected with the natural environment, where food comes from, and the

ability to make good decisions regarding their health and well-being. Together, these situations dramatically increase physical, mental, behavioral, and learning problems.

What has been done

* 133 pre-service teachers participated in 3 Connecting Learning and Living (CLL) classes and 113 classroom and afterschool educators (246 total) participated in 6 CLL trainings where they engaged in and received 12 healthy living and food-origin Iowa State University Extension and Outreach 4-H Growing in the Garden and Where We Live lessons.
* The focus of CLL curriculum is on integrating lessons into a variety of subject matter areas and life skills to develop literacy about how food is grown and choosing healthy foods -- especially increasing fruits and vegetables consumption, increasing physical activity, and going outdoors. MyPyramid is used as the starting point to teach and apply the food groups to youths' lives.
* USDA FNS People's Garden School Pilot Program (WA, NY, IA, AK), Wellmark Foundation Healthy Communities Program, and Iowa Team Nutrition grants were obtained that will add $1,134,000 in funding to healthy living initiatives in the states of Iowa, Washington, New York, and Arkansas that are using CLL training and curriculum. The grants will also help CLL training and curriculum reach 384 elementary teachers, Extension staff, community partners, and volunteers within these four states.

Results

* 52% of pre-service teachers and educators who participated in CLL training indicated a 1 to 3-point increase in interest and confidence in teaching about natural resources, agriculture, and food and nutrition.
* 99% responded they are likely/very likely to share the lessons with students in their classrooms.
* Participants' responses regarding what they learned from CLL classes included: 58% (112) had a better understanding about the availability of hands-on, integrated lessons to use in their classrooms; 57% (111) had a better understanding of the origins of food; 26% (50) had a better understood of the MyPyramid and healthy foods; and 53% (103) on other topics such as food and plant cycles.
* Participant quote showing knowledge change: "Before this program I did not have confidence, therefore little interest, in teaching agriculture or foods, but after this program, I am very excited to teach these in my classroom. Thank you!" (Pre-service teacher).

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #8

1. Outcome Measures

As reported by educators, percentage of youth participating in Connecting Learning and Living (CLL) lessons who increased their knowledge of the MyPyramid and making healthy food choices.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	79

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Iowa ranks 15th highest in obesity/overweight prevalence and is in the bottom 10% of fruit and vegetable consumption in the United States. Youth ages 8 to 18 sit in front of a screen for an average of 7 hours and 23 minutes each day and prefer being indoors rather than going outdoors. Youth and adults are disconnected with the natural environment, where food comes from, and the ability to make good decisions regarding their health and well-being. Together, these situations dramatically increase physical, mental, behavioral, and learning problems.

What has been done
* 102 teachers and 53 youth educators (155 total) who engaged in 6 hours of CLL nutrition and food origin lessons, and who represent 7,739 youth, completed the annual online survey.
* MyPyramid is used as a starting point within CLL lessons to help educators identify food groups, understand the importance of eating a variety of foods from each of the food groups, and know the importance of consuming more fruits and vegetables.
* Three grants (see first outcome) have been obtained to conduct research and evaluation and to integrate curricula (such as CLL) and gardening regarding this outcome. Approximately 10,000 youth from four states will participate in lesson activities to increase nutrition/healthy food choices knowledge in 2012.

Results
* Educators reported that 60% to 100% of their students (79% average) showed an increase in knowledge about the food they eat and the importance of making healthier food choices.
* Participants' responses regarding what they learned from CLL classes included: 26% (40) had a better understanding of MyPyramid concepts such as identification of food groups.
* Participants' quotes showing knowledge change: "Students understood nutrition better. They know the food groups and what they need to eat each day." "[Students] often talk about the food pyramid during lunch and snacks. [Students] talk about healthy food choices and getting active." "[Students] noticed the poster in the lunchroom and talked about the food groups and their lunches."

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #9

1. Outcome Measures

As reported by educators, percentage of youth participating in Connecting Learning and Living (CLL) lessons who made healthy food choices; tried new foods; and made healthier food choices during snacks, lunch, and class parties.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	80

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Iowa ranks 15th highest in obesity/overweight prevalence and is in the bottom 10% of fruit and vegetable consumption in the United States. Youth ages 8 to 18 sit in front of a screen for an average of 7 hours and 23 minutes each day and prefer being indoors rather than going outdoors. Youth and adults are disconnected with the natural environment, where food comes from, and the ability to make good decisions regarding their health and well-being. Together, these situations dramatically increase physical, mental, behavioral, and learning problems.

What has been done
* 102 teachers and 53 youth educators (155 total) who engaged in 6 hours of CLL nutrition and food origin lessons, and who represent 7,739 youth, completed the annual online survey.
* CLL lessons focus on increasing fruit and vegetable consumption and have dozens of activities related to trying a variety of fruits and vegetables.
* Three grants have been obtained to conduct research and evaluation and to integrate curricula (such as CLL) and gardening related to this outcome. The Wellmark Foundation grant is paying $14,600 for healthy snacks and supplies that align with 18 CLL lessons that are being used at Iowa's 130 new garden and nutrition classroom and summer programs reaching 2,900 youth.

Results
* Educators reported that 60% to 100% of their students (80% average) made healthy food choices by eating fruits and vegetables during snacks and lunch.
* Participants' responses regarding what they observed in youth included: 20% (31) indicated youth were more willing to try and to eat fruits and vegetable during lunch, snacks, and parties.
* Participants' quotes showing behavior change: "[Students] chose to eat our fruit and vegetable snack every day. At the beginning of the year, very few wanted to take broccoli now they all do."

"At lunch they remembered the info about vegetables (roots, flowers) and tried them because they tried them during the CLL lesson in the classroom." "[Students are] more conscious about discarding food."

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #10

1. Outcome Measures

As reported by educators, percentage of youth participating in Connecting Learning and Living (CLL) lessons who increased their knowledge regarding growing food from plants.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	85

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Iowa ranks 15th highest in obesity/overweight prevalence and is in the bottom 10% of fruit and vegetable consumption in the United States. Youth ages 8 to 18 sit in front of a screen for an average of 7 hours and 23 minutes each day and prefer being indoors rather than going outdoors. Youth and adults are disconnected with the natural environment, where food comes from, and the ability to make good decisions regarding their health and well-being. Together, these situations dramatically increase physical, mental, behavioral, and learning problems.

What has been done
* 102 teachers and 53 youth educators (155 total) who engaged in 6 hours of CLL nutrition and food origin lessons, and who represent 7,739 youth, completed the annual online survey.
* CLL lessons focus on increasing fruit and vegetable consumption including becoming familiar with the plants they eat and how to grow them.
* According to the survey, youth were engaged in gardening at 99 sites - 48 at schools, 19 at home, 14 at daycares, 8 community gardens, and 10 other sites.
* Three grants have been obtained to integrate curricula (such as CLL) and gardening related to this outcome. Two of three grants pay for 130 new school gardens in Iowa and 160 new school

gardens in 3 other states. The grants provide $29,900 for raised be or container gardens in Iowa.

Results
* Educators reported that 70% to 100% of their students (85% average) talked about where food comes from and had an understanding of how to grow food.
* Participants' responses regarding what youth learned from CLL lessons included: 36% (56) indicated youth knew how to identify fruits and vegetables, identify the parts of plants they eat, and how to grow the fruits and vegetables they eat.
* Participants' quotes showing knowledge change: "Students learned what parts of plants their food comes from." "They [students] learned what a plant needs to stay alive."

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #11

1. Outcome Measures

As reported by educators, percentage of youth gardeners participating in Connecting Learning and Living (CLL) lessons who improve their vegetable consumption.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	79

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Iowa ranks 15th highest in obesity/overweight prevalence and is in the bottom 10% of fruit and vegetable consumption in the United States. Youth ages 8 to 18 sit in front of a screen for an average of 7 hours and 23 minutes each day and prefer being indoors rather than going outdoors. Youth and adults are disconnected with the natural environment, where food comes from, and the ability to make good decisions regarding their health and well-being. Together, these situations dramatically increase physical, mental, behavioral, and learning problems.

What has been done

* 102 teachers and 53 youth educators (155 total) who engaged in 6 hours of CLL nutrition and food origin lessons, and who represent 7,739 youth, completed the annual online survey.
* CLL lessons focus on increasing fruit and vegetable consumption by engaging students in food activities they can apply personally and to where they live, work/learn, and play.
* Three grants have been obtained to integrate curricula (such as CLL) and gardening related to this outcome. Several research methods have started at 17 Iowa sites and 40 more U.S. sites to measure changes in students' fruit and vegetable consumption at school, home, and as a personal preference.

Results
* Educators reported that 60% to 100% of their students (80% average) increased their fruit and vegetable consumption
* Participants' responses regarding what they observed in youth included: 13% (20) indicated youth increased their fruit and vegetable consumption.
* Participants' quotes showing behavior change: "[Students] bringing fruits and vegetables in snacks and lunch bags." "At the beginning of the year, they [students] didn't try many fruits and vegetables but now there are much more willing to try them and often like them." "Instead of picking junk food, many decided to pick their favorite fruit or vegetable for a snack." "[Students] talked about eating healthier foods at home."

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #12

1. Outcome Measures

Percentage of 4-H'ers in grades 6-12 taking the Food Safety and Quality Assurance (FSQA) certification test who self-report improved techniques and practices in livestock record keeping, medications, food product safety, and ethics.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	58

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Providing a safe and healthy food supply has always been a key issue to the American consumer, but in recent years this issue has become even more important to consumers, wholesale distributors, restaurant chains, and foreign export markets with the recall of various foods and the outbreak of food borne illnesses. Not only details on treatments and/or medications given to animals, but also how animals have been raised and treated throughout their lives has become front page news. Consequently, livestock producers continually strive to improve management practices to ensure American citizen have the safest food supply in the world.

What has been done
A comprehensive food safety and quality assurance curriculum program (FSQA) is conducted each year with 4-H'ers. Through the use of a variety of educational materials including video tutorials to hands-on learning, youth learn about animal identification, source verification (when and where the animals are born and raised), biosecurity measures (cleanliness techniques, disease contamination, on-farm disease transmission), drug treatments and injections, quality record keeping, and appropriate animal handling and welfare requirements.

Results
In the 2010/2011 program year, 230 randomly selected 4-H youth received an online survey regarding how their FSQA techniques and practices were changed in the areas of record keeping, medication administration, food product safety, and ethics. Of the 230 youth who received the online survey, only 44 youth completed the survey. Of the 44 youth who completed the survey, approximately 58% of the youth indicated they strengthened their behavioral practices after attending the Food Safety and Quality Assurance training courses in the areas of record keeping, medication administration, food product safety, and ethics. 4-H'ers and livestock producers are being rewarded for superior meat products and for raising their animals in certain environmental conditions. For example, beef animals with no antibiotic treatments or animals that are raised a certain way can receive a premium anywhere between $.05-$.10/pound for a 4-H'er. Each year, the meat industry spends over $80 million in meat inspection costs. Much of this cost could be reduced at the producer level by educating youth on how to treat and handle their animals. Knowing that a single disease outbreak or a food recall can cause irreversible damage to the U.S. markets, it is imperative to continue to educate youth on the important topics that are covered in this curriculum. Iowa is the top state for both hog production and egg layer production producing more than $10 billion in livestock value across all commodities, and also generates millions of dollars in agriculture jobs to the state economy. Iowa's 4-H youth are the future farmers and livestock producers of this state and are needed to increase job growth and economic development.

Please Note: The following changes from the 2010 to 2011 post-FSQA survey administration process could explain differences in this year's anticipated data...
* In 2010, a paper survey was given to youth immediately after FSQA training, but in 2011, the survey was given electronically; youth were asked to complete the survey when time allowed. A majority of the randomly selected youth did not complete the online survey.
* A majority of youth surveyed in 2011 were in grades 6-12. By opening the survey to youth of this age range, it is possible that a majority of the youth already knows the material and believes they have changed their record keeping, medication administration, food product safety, and ethical practices/techniques.
* In 2012, a paper survey will again be provided so that youth will complete the survey immediately following FSQA training. Additionally, an increase in the number of randomly selected counties where youth will be asked to complete the paper survey will increase the survey return rate.

* In 2012, the survey will be administered to youth in 5-6 grade who are just beginning to learn quality techniques and practices in areas such as record keeping, medication administration, food product safety, and ethics. Focusing on younger youth may result in a more accurate reflection of the level of changes in youths' livestock handling and treatment techniques/practices.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #13

1. Outcome Measures

Percentage of youth who took the Youth Engagement, Attitudes, and Knowledge Survey (YEAK) who reported intention to pursue science, engineering, or technology related careers.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	78

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
According to the Committee on Prospering in the Global Economy of the 21st Century's report, Rising above the Gathering Storm, (The National Academies Press, 2007), the United States faces a critical shortage of young people with the skills and training to meet 21st century workforce needs and make scientifically informed decisions. In 2008 a Congressional Research Service (CRS) report (Kuenzi, 2008) urged the immediate need for STEM-related workforce development. The Iowa Department of Economic Development reports: The state's manufacturing sector contributes the largest share of state gross domestic product (GDP) of any major sector with $23 billion contributed in 2009. In order for Iowa youth to be successful in the 21st century they must be prepared with the skills and meet workforce needs.

What has been done
Throughout the state of Iowa, Extension 4-H programs offer STEM learning opportunities for Iowa youth to increase their STEM process skills and improve their positive attitudes toward STEM education and careers through workshops, school enrichment activities, STEM themed camps, and club and individual project work on STEM related topics. Programming provided during these

in- and out-of-school opportunities utilized national 4-H curriculum such The Power of Wind, Iowa State University and other Land Grant University resources such as GEAR Tech 21, and other available science education resources such as those available through NASA and NOAA.

Results
In the 2010/2011 year, 101 Iowa 4-H youth took the Youth Engagement, Attitudes, and Knowledge Survey (YEAK). The survey indicated that participants were enthusiastic about science and reported having strong science skills. 81% agreed that they like science, 72% agreed they are good at science, and 75% agreed that science is useful for solving everyday problems. 78% of participants agreed they wanted to pursue a science-related career after graduating from high school. 65% of participants reported they taught others about science through activities such as a demonstration or a presentation at a community meeting and 69% reported helping with a community service project related to science, such as planting trees or cleaning up a stream. For questions related to STEM process skills such as designing a scientific procedure to answer a question or using data to create a graph for presentation to others, between 72% and 96% of youth (depending on the question) reported they could usually or always complete such tasks.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #14

1. Outcome Measures

As reported by youth, 50% of youth will increase civic engagement knowledge and intent to engage in service in their communities.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	93

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In Iowa, 11% of the population lives below the poverty level (US Census), including 13.6% of related children under the age of 18 and 7.7% of individuals aged 65 and older. In 2009, Iowa's drop-out rate increased by 23% (IDOE), and according to the Iowa Youth Survey (2005) 65% of

11th graders do not feel supported in their neighborhoods and 70% do not feel supported in their schools. The statistics below represent some of the contributing factors for people experiencing economic hardship. In Iowa, 6% of Iowa's population is unemployed (USDOL), the highest rate for unemployment in Iowa since 1990. Inability to find affordable housing, eviction foreclosure, domestic violence and lack of employment are factors that contribute most heavily to the fact that 21,000 Iowans were homeless in 2005 (Iowa Statewide Homeless Study). Youth are an untapped resource who could make a difference in their communities, and in turn, could improve their relationships with adults in their communities.

What has been done

The ISU Extension and Outreach 4-H Youth Program created a statewide program called Reach Out Iowa (ROI) with a goal to impact over 6900 youth in 6 community sites. The purpose is to create a climate of positive community change that recognizes the strengths of youth. Through developing community partners with youth serving agencies, ISU Extension and Outreach staff have

* Trained 2500 volunteers trained in service learning from all 99 counties.
* Provided more than $75,000 to communities across the state, specifically targeting Sioux City, Cedar Rapids, Waterloo/Cedar Falls, Des Moines, Marshalltown, and Winterset, and Adair County.
* Conducted 271 training sessions to youth community providers,
* Supported 60 service learning projects that included food and clothing drives; financial literacy education; high school defensive driving simulations; cabin remodels; dissemination of resource and referral information on poverty-related issues; gardening projects at nursing homes; invasive species education; school readiness activities for disadvantaged youth in an inner city; weatherization of homes; and military family support activities.
* Impacted 2366 youth participants who worked provide service learning projects.
* Impacted 7028 Iowans who benefitted from these projects. Approximately 50% of the 7028 (3514) benefitting from these projects were economically disadvantaged.

Results

Results from ISU's Research Institute for Studies in Education show: Youth experienced significant changes as a result of their participation in service learning projects. Civic knowledge, leadership, community attachment, community responsibility, and perceptions of personal skills were greater after the experience as compared to before. Most youth benefitted for working with others and felt included and valued in the project. Their experiences made them care more about needs in their communities and they plan to do other service or volunteer projects. The project met a key performance measure that at least 50 percent of youth would increase their civic knowledge. 92.8% of youth participating in service learning projects indicated they "agree" or "strongly agree" that they plan to do other service or volunteer projects. Recipient organizations were extremely positive about the planning and implementation process. They indicated that the service learning projects were beneficial to their clients/recipients and that they, too, benefitted from their interaction with the youth and are now more interested in working with youth in the future. The project met a key performance measure that at least 75 percent of recipient organizations would report that the clients/recipients are benefitting from and/or finding the activities provided by the service learning participants to be useful.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

Iowa K-12 youth and adult populations continue to steadily decrease across the state. Geographical data also shows that population shifts continue to concentrate youth in the state's 11 "urban" counties. This youth population shift has impacted the Iowa 4-H Program by the need for placing increased numbers of staff and funds in youth development programs in these 11 counties. As a result of the population shift, some loss of program outreach has been experienced with more traditional 4-H audiences. Implementation of new and innovative programs to reach new youth audiences is dependent on the number of youth residing in a given county and developing relationships with potential volunteer citizen pools. Acceptance by current 4-H staff and volunteers of innovative and emerging 4-H club models is critical to implementing county expansion plans and is often challenging. Despite these challenges, we were able to meet program goals for innovative club programing due to implementation of grant funded programs. The ability to sustain these programs when grant funds disappear is unknown.

Aligning program outcomes with NIFA priorities, while maintaining and improving a comprehensive 4-H Youth Development program remains a challenge. The Iowa 4-H Youth Program emphasizes broader youth development and life skills outcomes while NIFA priorities are typically more narrowly focused around single topics. This is especially noticeable in program evaluation efforts of NIFA priorities. However, the Iowa 4-H Youth program has increased efforts to measure knowledge and behavior change of program participants in selected educational programs that match NIFA priority areas (ex: food safety and childhood obesity).

Localized natural disasters in the spring and summer of 2011 had an impact on youth programming and youth participation. Nine counties bordering the Missouri River saw significant flooding beginning in June 2011. Extension and Outreach staff in western Iowa spent a great deal of time assisting families forced to vacate homes and businesses and working with communities to implement disaster relief plans. Affected counties are reporting that a permanent loss in population will be seen as families choose not to return to the flooded areas. The population re-location lowered both 4-H enrollment and participation in 4-H programs and activities in affected counties.

Adoption of the Iowa Core Curriculum standards by the Iowa Department of Education and local school districts presents challenges in the ability of the Iowa 4-H Youth Program to partner with schools on youth programs. Additional time has been spent by staff evaluating current 4-H curricula to identify core standards met and/or revising curricula units to meet core standards needed for use by local school districts. Because local school districts are emphasizing formal education models as the best way to align local curricula with state and national standards, schools are more hesitant to engage in non-formal youth development educational offerings through Extension and Outreach.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Program Evaluation/Research

- **Iowa 4-H Campus Census Survey**
  - Responses were received from 2,624 ISU faculty, staff, and students. The overall return rate was 9%, primarily due to the lower return rate by students. Over 18% of the faculty, 28% of Professional and Scientific staff, and 18% of merit staff returned surveys, accounting for 71% of the returned surveys.
  - Results indicated that 53% of respondents (or 1,390) had been involved with 4-H programs.
  - Overall, 41% reported that they had been 4-H club members, 17% were 4-H youth participants, and 13% were parents of family members of a 4-H'er.
  - Eight hundred seventy-two (872) respondents indicated they were interested in sharing their skills and talents with the Iowa 4-H Program. Overall, they indicated that they would be interested in being adult volunteers (16%), being a 4-H club volunteer working with youth in grades 4-12 (11%), and being adult mentors (10%). Several faculty also indicated they would like to serve as workshop facilitators (12%).
- **Reach Out Iowa (ROI) Survey**
  - 343 service learning project leaders indicated training was effective in preparing volunteers to apply the service learning approach (IPARDC process) to community projects. They are confident in their ability to use their training and adopt the framework for future service projects.
  - Youth participants experienced significant improvement in civic knowledge, leadership, community attachment, community responsibility, and perceptions of personal skills after participating in service learning projects.
  - 92.8% of youth participating in service learning projects indicated they "agreed" or "strongly agreed" that they plan to do other service or volunteer projects in their communities.
  - 75% of recipient organizations reported that clients/recipients benefitted from and/or found the service learning activities provided by youth participants to be useful.
  - Recipient service learning organizations reported they are now more interested in working with youth in the future.
  - Focus groups with adults and youth involved in ROI service learning projects indicated that adults in the community, including teachers and project leaders, see teenagers as capable, responsible, and generous when provided with the opportunity to serve. Youth shared they learned communication, teamwork, and leadership skills and experienced a sense of pride and accomplishment in their work.

Key Items of Evaluation

CHILDHOOD OBESITY

As a result of 246 pre-service teachers and educators participating in Connecting Learning and Living (CLL) training on connecting youth with MyPyramid concepts and understanding the origins of food the following impact was obtained via surveys:

- 99% of pre-service teachers and educators who participated in CLL training responded they are likely/very likely to share the lessons with students in their classrooms; 58% indicated they had a better understanding about the availability of hands-on, integrated lessons to use in their classrooms; 57% had a better understanding of the origins of food; 26% better understood the MyPyramid and healthy foods; and 53% better understand other topics such as food and plant cycles.

- Educators reported that 60 to 100% of their students (79% average) showed an increase in knowledge about the food they eat and the importance of making healthier food choices.
- Educators reported that 60 to 100% of their students (80% average) made healthy food choices by eating fruits and vegetables during snacks and lunch.
- Educators reported that 70 to 100% of their students (85% average) talked about where food comes from and had an understanding of how to grow food.
- Educators reported that 60 to 100% of their students (80% average) increased their fruit and vegetable consumption
- Educators' shared...
  - "Before this program I did not have confidence, therefore little interest, in teaching agriculture or foods, but after this program, I am very excited to teach these in my classroom. Thank you!" (Pre-service teacher)
  - "Students understood nutrition better. They know the food groups and what they need to eat each day." "[Students] often talk about the food pyramid during lunch and snacks. [Students] talk about healthy food choices and getting active." "[Students] noticed the poster in the lunchroom and talked about the food groups and their lunches."
  - "[Students] chose to eat our fruit and vegetable snack every day. At the beginning of the year, very few wanted to take broccoli now they all do. " "At lunch they remembered the info about vegetables (roots, flowers) and tried them because they tried them during the CLL lesson in the classroom." "[Students are] more conscious about discarding food."
  - "Students learned what parts of plants their food comes from." "They [students] learned what a plant needs to stay alive."
  - "[Students] bringing fruits and vegetables in snacks and lunch bags." "At the beginning of the year, they [students] didn't try many fruits and vegetables but now there are much more willing to try them and often like them." "Instead of picking junk food, many decided to pick their favorite fruit or vegetable for a snack." "[Students] talked about eating healthier foods at home."

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Families: Expanding Human Potential

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
607	Consumer Economics	5%		10%	
703	Nutrition Education and Behavior	15%		25%	
704	Nutrition and Hunger in the Population	20%		0%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	5%		0%	
801	Individual and Family Resource Management	20%		25%	
802	Human Development and Family Well-Being	20%		29%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	5%		6%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	0%		1%	
805	Community Institutions, Health, and Social Services	10%		4%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	54.0	0.0	0.0	0.0
Actual Paid Professional	61.5	0.0	7.1	0.0
Actual Volunteer	0.0	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**
877335	0	249078	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
877335	0	249078	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1257867	0	1105826	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Educational programs will be directed toward individuals, families, professionals and community leaders through multiple methods -- classes, web-based programs, workshops, mass and social media to strengthen their knowledge and skills.

Parents were reached through sequential parenting education workshop series, one-session workshops, electronic and hard copy newsletters, social and mass media. Professionals and volunteers were trained to deliver evidence- and research-based curricula focused on parenting and family education and family caregiving. Children and youth were involved in sequential parent/child education workshops. Early childhood teachers and caregivers received instruction through sequential workshop series, online courses, one-session workshops and social media.

A number of volunteers are used for a variety of programs to help families expand their potential. The most developed volunteer program is Volunteer Income Tax Assistance with 84 community VITA volunteers trained by ISU Extension and Outreach to complete tax returns for 1,875 low-income Iowans who received $816,635 in EITC to bolster family incomes and local economies.

Faculty participated in relevant multistate research committees: NC1030, NC1171, and NECC1011.

2. Brief description of the target audience

Parents of young children and teens; families with low incomes, teachers and caregivers of children and adults, family service providers, parenting educators, couples, athletes, coaches, health professionals, worksite employees, food service managers, food processors, policy makers, businesses, community citizens and leaders, and researchers.

3. How was eXtension used?

Faculty and staff were deeply involved in leadership and membership of two eXtension CoPs that supported this work in parenting and family finance.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	56204	3039949	76095	8846

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	5	16	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of parents and family members in educational programs related to child care, parenting, couple relationships, aging and housing.
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of professionals involved in programs related to childcare, aging, couple relationships, parenting and housing programs.
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of adults participating in programs on improving personal and family financial management skills.

Year	Actual
2011	8884

Output #4

Output Measure

- Number of adults participating in programs on strengthening consumer decision making skills.

Year	Actual
2011	1333

Output #5

Output Measure

- Number of participants in educational programs that increase awareness of public issues.

Year	Actual
2011	1994

Output #6

Output Measure

- Number of community groups formed to address a public issue.

Year	Actual
2011	40

Output #7

Output Measure

- Number of adults who participate in Extension programs on food, nutrition, and health.

Year	Actual
2011	10824

Output #8

Output Measure

- Number of adult participants in Extension programs on food safety.
  Not reporting on this Output for this Annual Report

Output #9

Output Measure

- Number of adult participants in Extension programs on food insecurity.

Year	Actual
2011	1360

Output #10

Output Measure

- Number of youth participants in Extension programs on food, nutrition and health.

Year	Actual
2011	58562

Output #11

Output Measure

- Number of parents and family members in educational programs related to child care, parenting, couple relationships, and aging.

Year	Actual
2011	38097

Output #12

Output Measure

- Number of professionals involved in programs related to childcare, aging, couple relationships, and parenting programs.

Year	Actual
2011	3975

Output #13

Output Measure

- Number of professionals participating in education programming related to nutrition, physical activity and health promotion

Year	Actual
2011	272

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of parents improving parenting skills (child-parent communication and providing love and limits).
2	Number of professionals trained to assist families (certification programs).
3	Number of early child care programs improving learning environments and teaching strategies.
4	Number of participants better able to manage later life issues.
5	Number of individuals improving personal and family financial management skills.
6	Number of individuals strengthening consumer decision making skills.
7	Number of communities who report taking action to address public issues related to improving circumstances for children, youth and families at risk.
8	Number of adult participants who improve their diet.
9	Number of adult participants who increase their minutes of activity.
10	Number of communities that take steps to reduce food insecurity.
11	Number of participants certified in food safety programs.
12	Number of youth participants in Extension programs on food, nutrition and health.
13	Percent of worksite wellness program participants achieving action/maintenance according to the Stages of Change relative to fruit and vegetable intake.
14	Percent of worksite wellness program participants achieving action/maintenance according to the Stages of Change relative to physical activity.
15	Percent of adult EFNEP/FNP graduates increasing minutes of physical activity.
16	Percent of adult EFNEP/FNP graduates who made a positive change in food resource management skills such as not running out of food
17	Percent of adult EFNEP/FNP graduates who made a positive change in one or more nutrition practices.

Outcome #1

1. Outcome Measures

Number of parents improving parenting skills (child-parent communication and providing love and limits).

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	1969

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Lack of parenting knowledge and skills exists among parents who abuse children. Increased delinquency and violence among adolescents has challenged the juvenile justice system. Increases in delinquency and violence over the past decade are rooted in a number of interrelated social problems -- child abuse and neglect, alcohol and drug abuse, youth conflict and aggression, and early sexual involvement -- that may originate within the family structure. Children who begin school without basic language and literacy skills have difficulty learning to read, and reading level at end of 3rd grade predicts graduating from high school. Parents and other adults can be instrumental in preparing children to learn by reading to them at an early age. Pressure has increased at the state and local level to fund family support and parenting programs that have proven impacts.

What has been done
Professionals have been trained around the world to deliver the Strengthening Families Program: For Parents and Youth 10 to 14 (an evidence-based program that brings together parents and their preteens with the goal of reducing substance abuse and other problem behaviors in youth). Professionals in Iowa have been trained in Family Story Teller (an evidence-based family literacy program), and other research-based parenting education programs. Sequential parenting education workshops have been delivered to parents, as well as workshops on individual parenting topics. Electronic and hard copy parenting education newsletters have been delivered to parents, as well as podcasts, blogs, and Web sites with research-based parenting information.

Results

97% (N=600) of parents who participated in sequential parenting education programs improved one or more critical parenting practices. 96% (N=45) of parents who participated in the Family Story Teller program improved behaviors to help their children learn to read. For PROSPER there was over a 90% fidelity rate of PROSPER programs, thus, helping to ensure that families have the outcomes that are promised by the evidence-based Strengthening Families Program for Parents and Youth: 10-14. $168,000 was raised by seven Iowa communities to implement PROSPER. 98% of parents (N=1267) in SFP 10-14 reported improving their parenting practices especially centered around improved communication and balancing love and limits.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Number of professionals trained to assist families (certification programs).

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	2432

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
There is increasing awareness that the effectiveness of parenting and family education relies heavily on the quality of implementation. One of the most critical issue facing the development of parenting education is that of how practitioners are trained, supervised, and supported in their work with parents (Carter, 1996). The demands on practitioners are huge and include: expectation to work across cultures, disciplines, and systems; master a growing and diverse body of knowledge; be adept at the processes and methods that truly strengthen families; and produce dramatic results in shorts periods of time with ever-decreasing dollars.

What has been done
Thirty-five family support professionals serving 1,050 families participated in in-depth training (20-55 hours) through the Family Development Certification Training (FDCT) and Partnering with Parents (PWP) training to strengthen their knowledge and skills in delivering strengths-based

parenting and family education. Strengthening Families Program (SFP) 10-14 trainers have conducted 3-day certification trainings for personnel employed by agencies and school districts around the world. PROSPER team members are included in these trainings. 53 professionals were trained in Healthy Relationship and Marriage Education.

Results
FDCT and PWP post-pre evaluation data revealed that over 94% of the participants strengthened their knowledge and ability to apply principles of family-centered practices when working with families of cultures different than their own; identify strategies to support families in strengthening their advocacy skills; effectively facilitate small group learning; and help families identify and set goals. SFP 10-14 trainers have certified 2000 parenting educators and other family support professionals in the SFP 10-14 program around the world. These facilitators then implement the program with families in their communities. SFP 10-14 programs (including PROSPER sites) graduate over 90% of their families from the program. Fidelity of implementation is over 90% at observed SFP 10-14 and PROSPER sites.

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Number of early child care programs improving learning environments and teaching strategies.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	1627

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Iowa State University research examining Iowa's child care found that much of Iowa's child care quality is poor or mediocre. Overall, 20% of all observed Iowa child care was listed to be good. Nearly 20% of the observed infant child care centers in Iowa offered poor quality care; none were offering good quality care. 40% of the observed family child care homes offered poor quality. 34% of family child care providers reported receiving no child care training within a 12-month period.

What has been done
The Better Kid Care New Staff Orientation (NSO) program provided 16 hours of instruction for preschool and child care center staff and 6 hours of instruction for child care center directors. The Early Childhood Environment Rating Scale (ERS) program provided child care professionals with self-assessment, sequentially based instruction and guidance in developing a program improvement plan to strengthen the quality of early childhood education. Early Childhood Consultants working for Child Care Resource and Referral and Department of Public Health participated in a 15-hour skill-based introductory program and a four-day credential program. Single topic workshops on health and safety and early learning were also provided.

Results
Ninety-one directors/supervisors and 631 center or preschool staff participated in the NSO program. Of the 631 staff, 620 (98%) completed the NSO 30-lesson program, earning 16 hours of professional development credit. Staff showed statistically significant ($p < .001$) gains in each of the 11 NSO outcomes. Currently 733 centers or preschools (53% of Iowa licensed programs) participate in the NSO program. A retrospective survey of child care professionals (n=502) participating in the Early Childhood Environment Rating Scale training indicated that of participants 85% (n=502) could better identify strengths and limitations, prioritize changes and develop a workable plan for program improvement. Participants reporting gains in knowledge and program improvement reported working with a total of 24,133 children and 16,732 families.

4. Associated Knowledge Areas

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

Outcome #4

1. Outcome Measures

Number of participants better able to manage later life issues.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	56

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Iowa is 5th in the nation in population of people age 65 and older. There are high rates of depression and anxiety among caregivers and increased vulnerability to health problems. Caregivers report restriction of personal activities and social life as problems, and often feel they have no control over events, and that feeling of powerlessness has a significant negative impact on caregivers' physical and emotional health.

What has been done
100 leaders have been trained to implement Powerful Tools for Caregivers, a series of six classes designed to empower family caregivers of older adults to take better care of themselves. Caregivers learn how to reduce stress, improve caregiving confidence, establish balance in their lives, communicate their needs, make tough decisions, and locate helpful resources.

Results
99% (n=56) of those who completed participant evaluations report increased practice of self-care behaviors (e.g., increased exercise, use of relaxation techniques, and health self care).

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

Number of individuals improving personal and family financial management skills.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	8409

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Families face an increasingly complex market in which to make financial decisions. Stagnant family incomes increase the importance of making wise choices. Families need to balance immediate needs against long-term financial goals. Much of the information available to families is generated by the private sector and is inadequate for making well-informed financial decisions. Families need budgeting skills to plan for the future, an understanding of wise credit use,

knowledge of appropriate savings and investing alternatives, and retirement planning skills to achieve long-term financial security. Low-income families can benefit from community resources and services that extend limited resources and promote financial well-being. Research-based education is needed to provide relevant learning opportunities at teachable moments.

What has been done
Approximately 10,000 Iowans participated directly in financial management education programs. Workshops focused on the basics of budgeting, record keeping and credit use. Financial coaching training prepared community professionals and volunteers to work with clients to improve their financial well-being. 25 rural libraries partnered with Extension to offer investment education. Extension trained volunteers at rural VITA sites to prepare tax returns for low-income families. Public school teachers are trained on financial literacy competencies and, in turn, reach Iowa youth.

Results
Financial management educational programs resulted in:
* 95% of respondents (n=1,002) improved personal and family financial management skills
* 74% of respondents (n=435) took steps to reduce their debt
* 84 community VITA volunteers were trained by ISU Extension to complete tax returns for 1,875 low-income Iowans who received $816,635 in EITC to bolster family incomes and local economies.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #6

1. Outcome Measures

Number of individuals strengthening consumer decision making skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	1333

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Consumer choices have a direct effect on the utility gained from family resources. Informed decisions increase the probability that high levels of satisfaction will result. Virtually all consumers face a challenge of being informed decision makers given the rate of change in the marketplace. The quantity of information now available through multiple forms of media requires consumers to evaluate quality and then apply appropriate information to make decisions. Vulnerable consumers need to develop skills to assess and seek out reliable and timely information.

What has been done
More than 1,000 Iowans participated in programs that teach consumer decision making skills and encourage use of reliable information sources. Low-income and other vulnerable groups have been targeted for programs on financial consumer protection. Youth audiences have been taught comparison shopping skills. ISU Extension and Outreach provided volunteer training for mentors of domestic violence victims, on-going technical assistance to the Volunteer Representative Payee Program, and those completing the financial coaching training.

Results
Consumer decision-making educational programs resulted in:
* 88% of respondents (n=463) report strengthening consumer decision-making skills
* Workshops and individual consultations with low-income families have resulted in increased confidence to use credible information sources and avenues for redress of consumer problems.

4. Associated Knowledge Areas

KA Code	Knowledge Area
607	Consumer Economics

Outcome #7

1. Outcome Measures

Number of communities who report taking action to address public issues related to improving circumstances for children, youth and families at risk.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	40

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Poverty is often hidden in Iowa. The number of working poor is increasing and the rural urban gap is growing. Economic pressures have long term negative consequences for children and families. Solutions lie in both individual and collective/community response. Iowa's diversity is also changing, which affects communities, and poverty threatens the well-being of families. Citizens and community organizations together can make more informed decisions, collaborate, and take action to improve the quality of life of economically vulnerable families.

What has been done
Thirty-six Iowa communities with populations under 5,000 and poverty rates over 10% trained 301 local facilitators to lead 1,538 community members in working together to move from poverty to prosperity for all; 105 local trained volunteers taught leadership skills to 923 participants; 8,829 community residents shared their thoughts in a local visioning process and action plan to help reduce the local effects of poverty. Every year since 2003 these communities, with coaching by Families field specialists, conducted asset building activities to address poverty. Emerging leaders with positive attitudes made decisions and took charge of their future. As they gathered local residents around positive community actions, they achieved results on a number of issues. Four communities also participated in CYFAR.

Results
In 2011, 29 communities addressed food insecurity including one new food pantry serving 300 people. Eleven Volunteer Income Tax Assistance sites completed over 500 returns without charge and claimed over $250,000 in Earned Income Tax Assistance for eligible families. Twelve communities prepared 434 youth for academic success with mentoring, tutoring, or early learning programs. Elma built an early learning center that serves 70 children. Ten communities engaged entrepreneurs to increase family income and trained leaders who became mayors, city council members, and other community leaders. A total of $800,000 in grants, was leveraged in these communities. One community secured more than $6.4 million from grants, private funds, low interest loans, and tax credits from 29 entities to improve their community. CYFAR communities leveraged $18,700, created advisory committees, secured school facilities, secured County Extension Council support, and trained citizen facilitators for program continuation.

4. Associated Knowledge Areas

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

Outcome #8

1. Outcome Measures

Number of adult participants who improve their diet.

Not Reporting on this Outcome Measure

Outcome #9

1. Outcome Measures

Number of adult participants who increase their minutes of activity.

Not Reporting on this Outcome Measure

Outcome #10

1. Outcome Measures

Number of communities that take steps to reduce food insecurity.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	11

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
8% of U.S. households with seniors (2.2 million households) are low food secure. Low food secure seniors commonly have significantly lower intakes of vital nutrients in their diets when compared with food secure seniors. Elderly households are much less likely to receive help through Food Assistance (SNAP) than non-elderly households.

What has been done
To increase the financial resources low income seniors have available to purchase food that has the vital nutrients seniors need, Iowa State University Extension and Outreach trained 35 Retired Senior Volunteers who assisted 150 older adults in 11 Iowa communities in completing SNAP applications.

Results
If each of the 150 adults who applied was eligible and receives SNAP, the potential annual economic impact is $208,800 (150 adults x $116 average Food Assistance to Iowa older adults x 12 months).

4. Associated Knowledge Areas

KA Code	Knowledge Area
704	Nutrition and Hunger in the Population

Outcome #11

1. Outcome Measures

Number of participants certified in food safety programs.

Not Reporting on this Outcome Measure

Outcome #12

1. Outcome Measures

Number of youth participants in Extension programs on food, nutrition and health.

Not Reporting on this Outcome Measure

Outcome #13

1. Outcome Measures

Percent of worksite wellness program participants achieving action/maintenance according to the Stages of Change relative to fruit and vegetable intake.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	31

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Iowans are practicing behaviors that lead to a high risk of chronic disease including heart disease, diabetes, and certain types of cancer that can lead to disability. Behavioral Risk Factor Surveillance System (BRFSS) data suggest less than 20% of adult Iowans consume the recommended servings of fruits and vegetables.

What has been done
Nutrition and health programs are offered in every major community and most counties in Iowa. Programs focus on improving nutrition education and behavior to reduce negative health consequences brought about by overweight, obesity and inactivity. Programs are directed to professionals, volunteers, community leaders, individuals and families through multiple delivery methods. Direct delivery methods included educational classes, workshops, discussions, webinars, one-on-one interventions and hotlines. Indirect delivery methods included public service announcements, billboards, newsletters, radio/television media programs and websites.

Results
Nutrition and health trainings, workshops and presentations were attended by 8941 adults. Over 30.6% reported achieving action/maintenance according to the Stages of Change relative to fruit and vegetable intake.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #14

1. Outcome Measures

Percent of worksite wellness program participants achieving action/maintenance according to the Stages of Change relative to physical activity.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	52

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Less than half of all adult Iowans are performing physical activity which meets national recommendations (BRFSS, 2009). Technological advances have decreased physical activity among all age groups. The average amount of time adult Iowans engage in watching television, playing video games or computer work (outside of work) is 2.7 hours each day; the median is two hours. Almost 6 percent engaged in such activities never or less than daily, while 0.8 percent responded twelve or more hours each day. Adults watching more than two hours of television per

day have been shown to consume an additional 137 calories and were at higher risk for overweight and obese.

Collectively, these undesirable behaviors lead to a high risk of chronic disease including heart disease, diabetes, and certain types of cancer that can lead to disability and death. These chronic diseases not only exert a financial strain (healthcare and worker productivity), but decrease longevity and quality of life.

What has been done
Nutrition and health programs are offered in every major community and most counties in Iowa. Programs focus on improving nutrition education and behavior to reduce negative health consequences brought about by overweight, obesity and inactivity. Programs are directed to professionals, volunteers, community leaders, individuals and families through multiple delivery methods. Direct delivery methods included educational classes, workshops, discussions, webinars, one-on-one interventions and hotlines. Indirect delivery methods included public service announcements, billboards, newsletters, radio/television media programs and websites.

Results
Nutrition and health trainings, workshops and presentations were attended by 8941 adults. Over 52.1% of program participants reported achieving action/maintenance according to the Stages of Change relative to physical activity.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #15

1. Outcome Measures

Percent of adult EFNEP/FNP graduates increasing minutes of physical activity.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	46

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The 2010 Dietary Guidelines for Americans recommend adults participate in moderate physical activity for 30 minutes per day on five days per week. The 2009 Behavioral Risk Factor Surveillance System data show that less than half of adult Iowans meet these physical activity recommendations. Furthermore, these data show that physical activity among Iowans increases with income with nearly three times as many people with an income below $15,000 participating in no physical activity when compared to those with income above $75,000.

What has been done
As part of EFNEP and SNAP-Ed, a series of eight to ten nutrition lessons is taught by paraprofessional nutrition educators to low-income families with children age ten and under and pregnant women/teens. These lessons show participants how to choose nutritious foods, stretch their food dollars, handle food safely, be physically active, and prepare nutritious recipes. Each lesson has a physical activity component. In particular, lesson 1, Get Moving, focuses on physical activity.

Results
Following participation in at least eight lessons, 46.2% of participants increased the amount of physical activity in which they regularly participate. In addition, by the completion of the program, 76.9% of participants reported meeting the physical activity recommendations set by the 2010 Dietary Guidelines for Americans.

4. Associated Knowledge Areas

KA Code	Knowledge Area
704	Nutrition and Hunger in the Population

Outcome #16

1. Outcome Measures

Percent of adult EFNEP/FNP graduates who made a positive change in food resource management skills such as not running out of food

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	85

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Previous EFNEP and SNAP-Ed data show that low-income families do not, seldom, or sometimes (as opposed to most of the time or almost always) practice food resource management skills such as planning meals in advance, comparing prices of foods, and using grocery lists. These skills can prevent or alleviate food insecurity. In 2009, Iowa State University Extension and Outreach staff surveyed food pantry participants and found the majority were food insecure with over half experiencing very low food security. Behavioral Risk Factor Surveillance System data from 2009 indicated that more than 10% of Iowans struggled with food security.

What has been done
As part of EFNEP and SNAP-Ed, a series of eight to ten nutrition lessons is taught by paraprofessional nutrition educators to low-income families with children age ten and under and pregnant women/teens. These lessons show participants how to choose nutritious foods, stretch their food dollars, handle food safely, be physically active, and prepare nutritious recipes. In particular, lesson 2, Plan, Shop, $ave, focuses on food resource management skills such as meal planning, comparing prices, and using grocery lists.

Results
Following participation in at least eight lessons, 85% of participants showed improvement in at least one food resource management practice. Of these participants, 61% more often planned meals in advance, 48% more often compared prices when shopping, and 57% more often used a grocery list. Furthermore, 45% of these participants reported that they less often ran out of food before the end of the month (improved their food security).

4. Associated Knowledge Areas

KA Code	Knowledge Area
704	Nutrition and Hunger in the Population

Outcome #17

1. Outcome Measures

Percent of adult EFNEP/FNP graduates who made a positive change in one or more nutrition practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	88

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Previous EFNEP and SNAP-Ed data show that low-income families do not, seldom, or sometimes (as opposed to most of the time or almost always) practice healthy nutrition behaviors such as thinking about healthy food choices when deciding what to feed their families, prepare foods without adding salt, and use the "Nutrition Facts" to make food choices. Additionally, the 2009 Behavioral Risk Factor Surveillance System data show that Iowans in general do not practice healthy nutrition behaviors. For example, only 18.5% of Iowans consumed five fruits and vegetables per day.

What has been done

As part of EFNEP and SNAP-Ed, a series of eight to ten nutrition lessons is taught by paraprofessional nutrition educators to low-income families with children age ten and under and pregnant women/teens. These lessons show participants how to choose nutritious foods, stretch their food dollars, handle food safely, be physically active, and prepare nutritious recipes. Lessons three through seven all focus on practicing healthy nutrition behaviors -- Vary Your Veggies...Focus on Fruit, Make Half Your Grains Whole, Build Strong Bones, Go Lean with Protein, and Make a Change (addresses sodium, fats, and added sugars).

Results

Following participation in at least eight lessons, 88% of participants showed improvement in at least one nutrition practice. Of these participants, 44% more often thought about healthy food choices when deciding what to feed their family, 43% more often prepared foods without adding salt, and 68% more often used the "Nutrition Facts" to make food choices.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

Due to changes in staffing patterns we have decreased our offerings of the Family Development Certification Training and Partnering with Parents training this year, thus reaching fewer family serving professionals through these training programs. Economic constraints continue to influence program planning and participation rates. Citizens and

organizations may wish to participate in programs but lack resources of time and transportation. Federal and state legislation continues to impact appropriations and policy for nutrition and health programming initiatives. In this state, a grocery store chain has begun employing Registered Dietitians in stores throughout the state (currently 100). This trend has created competition for programming in rural communities that had been traditionally served by ISU Extension and Outreach staff. Healthcare reform will also modify the landscape for programming in this plan of work; additional opportunities in preventive health care may be available for ISU Extension. Increasing interest in indirect delivery methods continue for individuals and employers. Educational materials are available on the Spend Smart, Eat Smart website and Nutrition and Health website. Extension in this state continues to experience loss of staff, which also fuels the demand for more programming via technology. The diversity of the population in Iowa continues to change and challenges programming efforts that are sensitive to ethnic cultures.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Pre/post evaluations were completed by 45 parents who completed the six session Family Story Teller program series. On all tasks measured, parents reported more often doing the tasks after the program, compared to before the program. 89% reported talking about the book cover with the child after the program compared to 33% before the program. 96% reported letting their child tell the story after the program compared to 58% before the program. 92% reported helping their child connect things in the story to real life after the program, compared to 58% before the program.

A 12 month follow up online evaluation was conducted with parents who received the monthly Just in Time Parenting e-newsletter. 84% of those who responded were first time parents. 100% of parents agreed the newsletters helped them provide opportunities for their baby to explore and learn, try different ways to calm their baby, protect their baby from accidental injuries, show their baby books and pictures, be less angry when their baby was difficult. 90% agreed the newsletters helped them take care of themselves. 94% reported sharing the newsletters with a friend, 97% printed and kept the newsletters for later reference. 89% strongly agreed that the newsletters helped them know what to expect their baby to be able to do at each age, 84% strongly agreed they were more confident in their parenting skills, and 83% strongly agreed that the newsletter helped them notice their baby's cues. 86% strongly agreed the newsletter helped them have more ideas about disciplining their baby without spanking or slapping.

The PROSPER Partnership Model has the following results: Alcohol use has been reduced by an average of 32% for 10th grade students. About 61 students in a PROSPER site try marijuana compared to 100 students in a non-PROSPER site. About $9.60 is returned for each dollar invested in PROSPER. PROSPER reaches about 17% of Iowa families of middle school aged students as compared to traditional family program participation which ranges from 1-6%. Once 15-20% of families participate, they can have a positive impact on the rest of the families in that community. Youth from PROSPER communities implementing evidence-based programs tend to be more engaged in school and have higher academic success than youth in PROSPER control communities. Community stakeholders in PROSPER communities have more positive perceptions of the school system than do stakeholders in control communities.

Key Items of Evaluation

SFP 10-14 has significant impact on the youth and their parents. SFP 10-14 has been proven to delay the onset of adolescent substance use (including methamphetamines),

lower levels of aggression in youth, increase self-esteem in youth, and decrease depression in youth. The program has shown effectiveness in positive parenting practices and appreciation and love towards their youth. SFP 10-14 is being implemented across the United States as well as in over 15 other countries. Currently SFP 10-14 has contracts with the United Nations in Serbia, Albania, and Panama.

This state plan of work has identified and implemented priority programming. Priority programming criteria included timeliness, relevance, uniqueness (services not offered by other organizations), sequential, and impact. Sequential programming was prioritized based on the ability to demonstrate impact. To evaluate priority programs online surveys are capturing evaluation/impact data. Participants of worksite wellness program Stage of Change relative to fruit/vegetable intake and physical activity will be evaluated. EFNEP continues to collect required pre/post data for federal reports.

Worksite wellness -- participant survey collected pre and post training will be entered into online system for statewide analysis relative to Stages of Change for fruit/vegetable intake and physical activity.

EFNEP -- participant survey/interview collected pre and post program participation.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Community and Economic 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
608	Community Resource Planning and Development	100%		100%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	25.0	0.0	11.0	0.0
Actual Paid Professional	23.0	0.0	6.6	0.0
Actual Volunteer	0.0	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
414449	0	208808	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
414449	0	208808	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
2340599	0	535206	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Workshops and educational efforts were conducted with community organizations, individuals and leaders to assist developing and implementing plans for physical and social community improvements. Research and outreach to communities was done on planning, zoning, resource management, and community and economic development activities using a variety of information dissemination methods.

Training sessions were conducted to improve skills of local government officials, community leaders and individuals. Development of a process model that communities can use to determine residents' housing needs was initiated in response to the flooding in 2008. Several CED initiatives addressed healthy communities (NE Food and Fitness, I-WALK, Story County Health Assessment).

Faculty participated in relevant multistate research committees: NC1030, NC1034, and NE1029.

2. Brief description of the target audience

Individuals, businesses, organizations, public officials, community leaders, and public and not-for-profit organizations in Iowa.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	72360	708277	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	0	20

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of articles, publications, reports, plans.

Year	Actual
2011	384

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Community visioning and design: Communities completing quality of life projects.
2	Community planning: Community plans/projects initiated.
3	Community planning: Communities with improved civic functioning.
4	Community economic development: Communities participating in economic development events.
5	Community economic development: Number of jobs created or retained.
6	Community planning: Communities participating in training sessions.
7	Community economic development: Number of businesses started.
8	Community institutions, health and social services: Community improvements made.

Outcome #1

1. Outcome Measures

Community visioning and design: Communities completing quality of life projects.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	33

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
A gap exists between demand for design services to rural Iowa communities and the availability of those services. Many smaller communities in Iowa face enhancement related issues that they are unable to address due to lack of planning personnel and/or resources. Many small Iowa communities also lack resources and expertise to develop comprehensive plan and individual community improvement projects. Issues facing communities include the growing bioeconomy, Iowa's aging population, and wellness issues such as adult and childhood. Several severe weather events, including flat-line winds, flooding and tornadoes have affected Iowa towns, increasing in both number and severity. As a result, many Iowa communities are in a state of recovery.

What has been done
The Iowa's Living Roadways Community Visioning Program assists small Iowa communities to develop enhancement plans that reflect the values and identity of the community. The visioning process is sponsored by the Iowa DOT in partnership with ISU Extension and Trees Forever. In 2011, the Community Visioning Program provided technical landscape and transportation planning assistance to 12 Iowa communities. Design studios worked 11 communities/areas in 2011. The College of Design's Bridge studio designed a sustainable, affordable single-family home for Corning Iowa.

Results
In 2011, 12 communities participated in community visioning or community planning programs. Each community received a conceptual design plan, a project feasibility study and assistance in implementation planning. Types of projects completed include roadside plantings, signage or signage improvements, streetscape enhancements, downtown area improvements, parks and other infrastructure improvements such as storm water drainage, welcome centers and historic

areas. ISU Extension conducted GIS short courses for 29 participants and published 10 new GIS tutorials. PLaCE projects completed included landscape planning for the Iowa Correctional Facility for Women, park planning in Perry, 2 community gardens, and 6 planning reports. Construction of the Iowa House in Corning was completed and the property went on the market in July 2011.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #2

1. Outcome Measures

Community planning: Community plans/projects initiated.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Community planning: Communities with improved civic functioning.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Rising fossil fuel costs, the current recession, shrinking city budgets, and disaster recovery expenses have created the need for communities to invest in alternative energy sources, such as biofuels, wind energy, and low-cost sustainable housing opportunities. When planning new community development, local governments need to take into account possible disasters, particularly flooding, before they take place, rather than just mitigating the effects after the fact. Increasing childhood obesity in the state has prompted many communities to develop methods to

create healthier environments.

What has been done
ISU Extension renewed the sustainability specialist position shared between CED and the City of Fairfield. ISU Extension and IFA conducted an online survey of residents in the 8 communities that were flooded in 2008: Cedar Rapids, Iowa City, Coralville, Mason City, Waterloo, Columbus Junction, Charles City, and Waverly, as well as an online survey of housing stakeholders. Face-to-face and telephone interviews and focus groups were also conducted to collect information. ISU Extension CED received a grant through IDOT and IDPH to develop mapping technology that can be used by school districts to create safe routes to school.

Results
In 2011 CED specialists analyzed the data collected from the housing study in 8 communities and published the results in a comprehensive report and individual reports for the participating communities. The information obtained from this process is being used to create training modules for distribution and use by councils of governments. Fairfield held several workshops for residents on backyard projects in sustainability, and showcased sustainability during local events. Extension CED piloted mapping technology using smartphones for SRTS in 12 communities throughout the state. The project, called I-WALK (Iowans Walking Assessment Logistics Kit) has resulted in requests from other communities for similar projects.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #4

1. Outcome Measures

Community economic development: Communities participating in economic development events.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	576

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Many communities in Iowa lack the resources necessary to develop innovative projects and initiatives designed to improve their economic growth. The current recession has further affected economic growth in these communities and they are looking for innovative ways to attract new residents, visitors and businesses. Because it has many experienced foreclosures and abandonments, Corning, Iowa, received $312,000 grant from the Neighborhood Stabilization Program, and needed assistance in determining the best way to use the grant money to make the town more viable. Buchanan County Conservation, Story County Health and Human Services, and the City of Ames requested assistance from CD-DIAL in conducting quality of life assessments.

What has been done
The ISU College of Design Bridge Studio worked with stakeholders in Corning to develop affordable, sustainable housing. CD-DIAL conducted random sample surveys in such topic areas as health care, health systems, economic development, land use, transportation, and environment and conservation. In response to the continuing increase in online shopping, Buy Iowa Online was established within a 22-county footprint in SE Iowa to promote local businesses.

Results
In July 2011, the first sustainable housing unit went on the market in Corning. The success of the Corning project led to the Adams County Commission on Sustainability deciding to build a second version of the house in the nearby town of Prescott. CED staff conducted leadership development workshops throughout the state (e.g., West Liberty, Manchester, and Waterloo). Buy Iowa Online was expanded in include local businesses statewide, and CED staff provided training to business owners who want to market their products online. In 2010-11, 283 businesses were expanded or improved and 1,300 local business leaders and entrepreneurs were assisted in creating and/or retaining jobs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #5

1. Outcome Measures

Community economic development: Number of jobs created or retained.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	307

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Due to housing crisis, financial crisis, and recessionary layoffs, a growing number of people are facing financial stress, credit issues, and loss of income. Many conventional lenders are not able to extend credit to entrepreneurs to the same extent as previously due to a tightening of underwriting standards. Extra technical assistance to small entrepreneurs with business plans that are realistic has been shown to reduce loan losses and enhance business success. Small business and jobs creation is particularly important for sustaining family income for many people during economic recovery.

What has been done
The Community Vitality Center (CVC) was created to identify policy topics of concern to rural communities; commission research to analyze the priority policy topics and impacts of public policy on rural areas; assess best practices, lessons learned and performance of alternative strategies to improve rural vitality; and foster collaborative partnerships to engage rural communities and diverse rural and urban interests in dialogue. ISU Extension CED continues to support immigrant entrepreneurship through programs such as First Step FastTrac classes and Exito en el Norte Spanish-language DVD series.

Results
CVC partnered with the Community Foundation of Greater Des Moines and Iowa MicroLoan on an Iowa Microenterprise Assistance Project cluster involving 7 rural community foundations affiliates: Adair, Greene, Boone, Story, Hardin, Mitchell, and Okoboji Foundation. Evaluations of the pilot demonstrations showed that adding a part-time staff person increased donations and gifts by $700,000 in one county and $480,000 in another. CVC organized a FastTrac certification workshop for 15 Main Street directors and IDED staff and 15 participants from Iowa MicroLoan, ISU Extension, New Iowa staff and Horizon community staff. CVC also hosted four seminars on Iowa's Hybrid Cooperative Law presented by the Iowa Institute of Cooperatives to local food producers, consumers and organizers. CVC provided technical assistance support for the Iowa Foundation for Microenterprise and Community Vitality (IFMCV). All MicroLoan borrowers are entrepreneurs who have previously been denied credit from conventional lenders. IFMCV has outstanding loans to 26 businesses, 17 of which were business startups. In 2010, CVC assisted IDED and Iowa Microloan in implementing the Iowa Small Business Loan Program. The year the ISU Loan Program provided loans to 42 businesses that created or retained 130 direct jobs and generated $3.4 million in new business financing investment by leveraging $1.6 million in direct loans with $1.7 million Is co-financing by local financial institutions. An estimated 228 total direct, indirect and induced jobs have been creating since the program started. Twelve of the ISU loans approved were for business startups. CVC is working with state and national interests to create a multi-state Rural Enterprise Finance Network (REF Net) and national Policy Center for Rural Enterprise Finance (PCREF). REF NET will create Small Entrepreneur Capital and Tech Assistance project in underserved and economically distressed rural counties.

ISU Extension CED and the University of Minnesota developed a proposal to assess the financing and technical assistance needs of underserved rural entrepreneurs -- particularly Latino

entrepreneurs -- and identify barriers separating them from service providers. The proposal was funded by the North Central Regional Center for Rural Development through a competitive grant process for land-grant institutions. The project started in November 2011 with a two-day roundtable to determine how to assess the needs of underserved entrepreneurs, identify communities from which to collect data, and develop a time line. The study will be completed in 2012.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #6

1. Outcome Measures

Community planning: Communities participating in training sessions.

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

Community economic development: Number of businesses started.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	120

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Due to housing crisis, financial crisis, and recessionary layoffs, a growing number of people are facing financial stress, credit issues, and loss of income. Many conventional lenders are not able to extend credit to entrepreneurs to the same extent as previously due to a tightening of underwriting standards. Extra technical assistance to small entrepreneurs with business plans that are realistic has been shown to reduce loan losses and enhance business success. Small

business and jobs creation is particularly important for sustaining family income for many people during economic recovery. One economic sector commonly overlooked is that of rural entrepreneurs, particularly Latino entrepreneurs, despite the fact that immigrant entrepreneurs are three times more likely to apply for patents than other entrepreneurs.

What has been done
The Community Vitality Center (CVC) was created to identify policy topics of concern to rural communities; commission research to analyze the priority policy topics and impacts of public policy on rural areas; assess best practices, lessons learned and performance of alternative strategies to improve rural vitality; and foster collaborative partnerships to engage rural communities and diverse rural and urban interests in dialogue. ISU Extension CED continues to support immigrant entrepreneurship through programs such as First Step FastTrac classes and Exito en el Norte Spanish-language DVD series.

Results
CVC collaborated with Iowa MicroLoan, the Iowa Small Business Development Centers (SBDCs), and IDED to implement a $5 million Iowa Small Business Loan Program. The ISB Loan Program provided loans to 42 businesses that created 130 direct jobs and generated $3.4 million in new business financing investment by leveraging $1.6 million in direct loans with $1.7 million in co-financing by local financial institutions. CVC organized a Fast Trac certification workshop for 15 Main Street directors and IDED staff, 15 participants from Iowa Microloan, ISU Extension, New Iowan staff, and Horizon Community staff. CVC provided technical assistance support for the Iowa Foundation for Microenterprise and Community Vitality (IFMCV) during its second year of operation. All MicroLoan borrowers are entrepreneurs who have previously been denied credit from conventional lenders. IFMCV had loans outstanding to 26 businesses, 17 of which were business start-ups.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #8

1. Outcome Measures

Community institutions, health and social services: Community improvements made.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	1208

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Iowa municipal employees must also deal with constantly changing legislation and procedures. Many communities in Iowa are still recovering from severe flooding or tornado damage that created a new set of problems local officials and organizations are still addressing. An added dimension has been the country's financial crisis, particularly in terms of housing. State, county, and local government revenues are down because of the slow economy as well and need information about planning fiscal year budgets.

What has been done
Extension Office of State and Local Government Programs conducted its annual municipal professionals' certification program. ISU Extension CED and the Iowa League of Cities conducted six budget workshops throughout the state to help Iowa's city clerks and finance officers prepare for the fiscal 2012 budget. Extension CED partnered with the Iowa Finance Authority to develop a statewide housing policy, and Extension CED continued to assist in establishing local housing trust funds.

Results
In 2011, 306 municipal professionals were trained at the Extension Office of State and Local Government Programs municipal professionals' certification program. More than 600 city clerks and finance officers attended budget workshops conducted by Extension CED and Iowa League of Cities. Nearly 300 planners and local officials attended planning and zoning workshops held in six locations in the state. Extension CED partnered with the Iowa Finance Authority to develop a statewide housing policy. Extension CED assisted 36 counties in establishing housing trust funds, resulting in grants and leveraged resources totaling nearly $3 million.

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

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

ISU Extension Community and Economic Development conducted a roundtable to address underserved entrepreneurs (rural and immigrant entrepreneurs). For the Community Visioning Program, random surveys of residents in six communities were conducted to obtain feedback for the development of transportation enhancement concepts. CD-DIAL conducted random sample surveys in such topic areas as health care, health systems, economic development, land use, transportation, and environment and conservation.

Key Items of Evaluation

There continues to be a need for better community programming. Community programming is often not intuitively related to what is seen as Agricultural Extension. CED continued to publish its quarterly newsletter and improve the Program Builder website, and continues to develop ongoing programming into products. Development of a process model that communities can use to determine residents' housing needs was initiated in response to the flooding in 2008. Providing support in disaster recovery is crucial with the increasing number of severe weather events in Iowa. Several CED initiatives addressed healthy communities (NE Food and Fitness, I-WALK, Story County Health Assessment). CED continues to develop programming for the growing Latino population in Iowa, such as assistance to Latino entrepreneurs and citizenship classes.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Global Food Security and Hunger

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	15%		0%	
131	Alternative Uses of Land	4%		0%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		5%	
202	Plant Genetic Resources	0%		5%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		6%	
204	Plant Product Quality and Utility (Preharvest)	0%		3%	
205	Plant Management Systems	11%		3%	
212	Pathogens and Nematodes Affecting Plants	2%		12%	
216	Integrated Pest Management Systems	9%		4%	
301	Reproductive Performance of Animals	4%		1%	
302	Nutrient Utilization in Animals	4%		12%	
303	Genetic Improvement of Animals	4%		22%	
305	Animal Physiological Processes	0%		12%	
311	Animal Diseases	0%		6%	
401	Structures, Facilities, and General Purpose Farm Supplies	8%		0%	
405	Drainage and Irrigation Systems and Facilities	12%		0%	
503	Quality Maintenance in Storing and Marketing Food Products	0%		5%	
601	Economics of Agricultural Production and Farm Management	10%		1%	
602	Business Management, Finance, and Taxation	9%		1%	
603	Market Economics	8%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	69.0	0.0	50.0	0.0
Actual Paid Professional	75.6	0.0	72.9	0.0
Actual Volunteer	0.0	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
2310891	0	4167730	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
2310891	0	4167730	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
2652935	0	40638553	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Continue to be a leading research institution on basic and applied research that increases Iowa agricultural production capacity. Increase the knowledge of agricultural professionals in Iowa through extension education programs that develop skills to evaluate emerging technologies and best management practices that encourage sustainable and efficient production while minimizing risk. In this way they are better able to change their behavior in adopting more profitable and sustainable practices. Hire and retain faculty and staff that are committed to the growth of Iowa agriculture. Facilitate integrated research/extension teams to address problems that threaten a sustainable supply of agricultural commodities sought by global entities. Support professional development of faculty and staff to ensure that they are competitive in obtaining external funding, and are respected by peers and professionals in the agricultural sector.

Faculty participate in the following associated multistate research committees: NC0007, NC0140, NC0205, NC213, NC1023, NC1026, NC1029, NC1030, NC1034, NC1035, NC1036, NC1037, NC1038, NC1040, NC1168, NC1170, NC1171, NC1177, NC1183, NC1184, NE1020, NE1028, NE1034, NE1042, NRSP8, S0294, S1025, S1027, S1032, S1033, S1039, S1043, W1009, W1173, W2168, W2171, W2177, and others.

2. Brief description of the target audience

Agricultural producers and their families in Iowa and the agribusiness and industry professionals, commodity organizations, resource managers and agencies that interact with them. Policy makers, decision makers, regulators and legislators that impact agriculture. National and international scientific community, and engineers. General public.

3. How was eXtension used?

Cooperatives Community of Practice (CoP) on eXtension: Iowa led the development of the multi-state Cooperatives CoP which successfully launched a new eXtension website in October 2010, www.

extension.org/cooperatives. The site features information, news, events, and frequently asked questions about cooperative principles, business development, finance, board strategy, marketing and youth. An Ask-an-Expert tool allows information users to ask specific questions about cooperatives. New sector specific content has begun to take shape in 2011, including food cooperatives, farm supply and grain marketing cooperatives, rural electrics and credit unions. A newly created youth content team is working to develop exciting multi-media content to help young people learn about cooperative principals and career opportunities and highlighting the UN 2012 International Year of Cooperatives. The Community of Practice is a collaborative effort led by Extension professionals and university professors from across the country with support from industry partners and USDA Rural Development. The eXtension website features 58 different topics developed by 76 land grant universities.

Community of Practice serves as a resource on Animal Manure Management: The Livestock and Poultry Environmental (LPE) Learning Center was established to improve the connection between national experts and those advising animal producers on environmental issues. With the development of eXtension's community of practice (CoP) concept, the Learning Center became the CoP resource for the public on animal manure management issues. Iowa State University is part of a team of about 60 national experts who have developed a content-rich animal manure website that provides current education and research on emerging animal waste issues. Webcast seminars have addressed the value of manure, alternative technologies, and nutrient concerns from a national perspective. As hot topics materialize, presentations on Changing Concentrated Animal Feeding Operations (CAFO) Regulations and Pathogens have been added. The webinars are accessible to the public nationwide.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	120739	7101322	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 13

Patents listed

Anti-FvTox1 Antibody and Nucleic Acids for Enhancing Foliar Sudden Death Syndrome Resistance in Soybean (Plant Anti-FvTox1 Antibody in Enhancing Foliar Sudden Death Syndrome Resistance in Soybean); Inventors: M Bhattacharyya, HK Brar; filed 10/25/2010.

BPMV-Based Viral Constructs useful for VIGs and Expression of Heterologous Proteins in Legumes (Development of an Efficient DNA-Based Viral Gene Silencing Vector System for Soybean Functional Genomics); Inventors: J Hill, C Zhang, S Whitham; filed 11/18/2010.

TAL Effector-Mediated DNA Modification (Transcription Activator-Like (TAL) Effector Nucleases); Inventors: A Bogdanove, M Christian, C Schmidt, D Voytas, F Zhang, T Cermak, E Doyle, L Wang; filed 12/10/2010.

Assay for Measuring Rootworm Resistance (Assay to Measure Rootworm Resistance to Transgenic Maize); Inventor: A Gassmann; filed 12/13/2010.

Method to Improve Meat Tenderness (Calcium Lactate to Improve Pork Tenderness); Inventors: E Lonergan, S Lonergan; filed 01/28/2011.

FvTox1-Interacting Proteins for Identifying and Introgressing SDS Resistance in Plants (FvTox1-Interacting Soybean Proteins in Developing Molecular Markers for Identifying and Introgressing Foliar SDS Resistance into Soybean Cultivars); Inventors: R Pudake, M Bhattacharyya; filed 04/27/2011.

Modification of Plants for FvTox1-interacting Protein Carbonic Anhydrase to Enhance Foliar SDS Disease Resistance and Improve Yield (Modification of Soybean Plants for the FvTox1-interacting Protein Carbonic Anhydrase to Enhance Foliar Sudden Death Syndrome Disease Resistance); Inventor: M Bhattacharyya; filed 04/27/2011.

miRNA396 and Growth Regulating Factors for Cyst Nematodes Tolerance in Plants (miRNA396 as a Tool to Control Cyst Nematodes); Inventors: T Baum, TAF Hewezi; filed 04/28/2011.

Method to Decrease Hydrogen Sulfide Production in Ruminant Animals (Compounds to Mitigate Hydrogen Sulfide Production in Animals); Inventors: S Hansen, P Doane; filed 05/11/2011.

Aphicidal Toxins and Methods (Rational Design of Aphicidal Bt Toxins Using Aphid Gut Binding Peptides); Inventors: B Bonning, S Liu, H Li; filed 06/08/2011.

QTL Regulating Ear Productivity Traits in Maize (QTL Regulating Kernel Row Number (KRN) and Other Yield-Related Genes in Maize); Inventors: P Schnable, J Yang, R Swanson-Wagner, D Nettleton; filed 07/12/2011.

Swine Vaccines and Methods (Vaccine and Diagnostic Application of Recombinant Peptides Derived from Surface-Exposed and Protective Epitopes of H. parasuis Outer Membrane Proteins P2 and P5); Inventors: J McVicker, M Zimmerli, L Tabatabai, S Tadepalli; filed 07/21/2011.

Monomer Architecture of TAL Nuclease or Zinc Finger Nuclease for Efficient Genome Editing (A Monomer Architecture of TAL Nuclease or Zinc Finger Nuclease for Efficient Genome Editing); Inventors: B Yang, T Li, S Huang; filed 09/23/2011.

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	144	157	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of producers and agribusiness professionals who attend face-to-face educational activities, including individual consultations.

Year	Actual
2011	79661

Output #2

Output Measure

- Number of producers and agribusiness professionals who subscribe to newsletters and access web-based resources.

Year	Actual
2011	4071911

Output #3

Output Measure

- Number of producers and landowners returning flooded land to production through implementation of science based strategies to protect food supply, prices and security.

Year	Actual
2011	275

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of producers who adopt livestock management and production systems and practices to improve cost control and market access.
2	Number of intergenerational transfers or new farm businesses established.
3	Number of crop and livestock producers who choose marketing, insurance or USDA program alternatives that are consistent with the risk bearing ability of their businesses and their personal preferences for managing risk.
4	Number of producers and other entrepreneurs who increase their awareness of alternative enterprises or value retained opportunities by either attending an educational program or downloading educational materials from a website.
5	Number of clients who participate in horticulture programs on production methods, market outlets, Best Management Practices, and IPM techniques.
6	Number of producers and service providers attending crop production and protection programming that focuses on improving agronomic practices.
7	Number of livestock and crop producers who adopt management and production systems and practices to improve cost control and market access.
8	Number of crop and livestock producers who increase their knowledge on marketing, insurance or USDA program alternatives that are consistent with the risk bearing ability of their businesses and their personal preferences for managing risk.
9	Number of producers and service providers who learn about crop production and protection strategies that focus on improving agronomic practices.
10	Number of farmers and agribusiness professionals who gained knowledge in safe pesticide application through pesticide management recommendations.

Outcome #1

1. Outcome Measures

Number of producers who adopt livestock management and production systems and practices to improve cost control and market access.

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Number of intergenerational transfers or new farm businesses established.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Number of crop and livestock producers who choose marketing, insurance or USDA program alternatives that are consistent with the risk bearing ability of their businesses and their personal preferences for managing risk.

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Number of producers and other entrepreneurs who increase their awareness of alternative enterprises or value retained opportunities by either attending an educational program or downloading educational materials from a website.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	62

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

According to the 2007 Census of Agriculture, the total number of farms in Iowa increased for the first time in years, primarily due to an increase in the number of small-scale lifestyle farms and rural residences with minor agricultural enterprises. Perhaps due to the downturn in the economy or the upswing in popularity of local foods, many smallholders have become interested in food production for personal and family use, and have been asking our Extension county offices what programming we had for them. It became apparent that acreage owners needed more attention from Extension in the area of resource-efficient, scale-appropriate food production and stewardship.

What has been done

Homegrown Lifestyle is a spring short course on local food production and natural resource stewardship targeted at acreage owners and other smallholders. Extension county offices sign up to be a host site, and a local program coordinator is designated. Coordinators recruit a cohort of participants from their region, facilitating peer-to-peer learning, as well as awareness of Extension and its programs. Each Thursday evening for 12 weeks, Homegrown Lifestyle cohorts participate in a webinar from an Extension specialist, as well as a locally-coordinated workshop/speaker/discussion, based on the week's designated local food topic. In addition, local coordinators lead cohorts on half-Saturday tours and/or in-depth workshops on a topic of great interest to their participants.

Results

Homegrown Lifestyle piloted in spring 2011 with 62 participants in three county offices (predominantly females between the ages of 35 and 65). The average participant moved from "some knowledge" to "good knowledge" on topics ranging from water management to edible landscaping to small poultry flocks. Participants got particular value from locally-coordinated workshops and speakers, including peer-to-peer learning and interaction. On average, course content met participants' expectations. Evaluations administered both during and immediately after the course indicate a wide variety of intended applications of lessons learned, including, for example, installation of rain barrels, composting, soil testing, planting trees, vegetable gardening, planning sustainable landscape designs, preserving food, raising poultry, rotational grazing, and food preservation. Six-month follow-up surveys are underway to gauge implementation. Homegrown Lifestyle 2012 will be offered in at least 10 Extension county office locations from April to June, likely reaching between 200 and 300 participants. Options to expand the reach on Homegrown Lifestyle programming and content are being explored.

4. Associated Knowledge Areas

KA Code	Knowledge Area
603	Market Economics

Outcome #5

1. Outcome Measures

Number of clients who participate in horticulture programs on production methods, market outlets, Best Management Practices, and IPM techniques.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Number of producers and service providers attending crop production and protection programming that focuses on improving agronomic practices.

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

Number of livestock and crop producers who adopt management and production systems and practices to improve cost control and market access.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	451

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A. In most winters, Iowa hay is adequate to meet the nutritional needs of gestating beef cows when fed free choice. However the continual rain during the 2010 summer resulted in over mature or rain damaged hay, which significantly reduced energy and protein content and therefore decreased the feed value. Almost 75% of forage samples tested were marginal in energy and almost 20% were marginal in meeting the protein needs of a mature beef cow in late gestation. Proper supplementation of impaired forages improves cow body condition and reproductive rate. Improved management of the feeding program also results in increased profitability to the

producer.
B. Recent EU requirements of not exceeding 400,000 cells/ml as an individual producer if milk ends up as part of any EU export product led both producers and industry partners to express concerns as well as an interest in educational venues and workshops to address key areas in dairy management, somatic cell and mastitis control, dairy product quality, farm and industry profitability, even for producers far below the EU limits. Producing the highest quality milk and dairy products ensures consumer confidence as well as enhances farm profitability through higher milk production and premium bonuses. Somatic cells or white blood cells are routinely measured in milk (individual cows and bulk tank) as a measure of quality (lower SCC = higher quality).
C. High tunnels have become important tools for fruit and vegetable growers in the Midwest to extend the season, increase productivity, profitability, and quality of their produce. However, unforeseen problems occur after the tunnels have been put into use. The USDA Natural Resources Conservation Service (NRCS) Environmental Quality Incentives Program (EQIP) Cost-sharing program (Conservation Practice Standard CODE 798 Seasonal High Tunnel System for Crops) has 178 producers who will need recommendations to prevent or mitigate problems when incorporating high tunnels in their production systems. The NRCS personnel responsible for this program need to increase their knowledge so they are better informed when making decisions for the producers in EQIP.

What has been done
A. Fourteen educational programs were held across Iowa to teach risk management related to weather variability, including forage testing, balancing rations to meet cow needs, allocating feed inventory, and tools to control feed cost and waste, with a total of 300 producers who attended. 171 Iowa producers submitted 465 forage samples affected by unusual summer weather during the 2010 production season. Extension Beef Specialists educated producers on how to use the results in ration balancing. Participants received copies of the summary of the forage testing project, as well as four publications created for this series of meetings.
B. Thirteen educational on farm milk quality workshops were conducted across Iowa with a focus on learning and adoption of skills to assess milk quality parameters and herd dynamics, address focal prevention areas related to lactating cow health and performance, dry and fresh cow mastitis management and stewardship, milking practices, and decision making processes in dealing with problem animals and/or herds. Initial needs assessments of producers were conducted by the ISU Extension and Outreach dairy team and dairy industry partners (milk processors and veterinarians), with subsequent development of a 5 module hands on farm workshop addressing these areas. Modules were developed by ISU dairy team specialists, and were jointly taught with industry partners.
C. Capacity building through Smith-lever funds enabled Extension to aggregate additional support to develop a prototype for rainwater catchment and irrigation use. The system was designed and installed on a high tunnel at the Armstrong Research and Demonstration Farm. Two field days were held to demonstrate the system (92 participants). An extension publication, pm-3017 "Rainwater Catchment from a High Tunnel for Irrigation Use" was written and available to download through the Extension Online store. Over 500 people viewed posters describing the project at the Practical Farmers of Iowa Conference and Iowa Fruit and Vegetable Growers' Association Conference. The publication is being shared with high tunnel producers by NRCS staff throughout the state. The publication was sent electronically to 115 growers who attended previous high tunnel trainings.

Results
A. Body condition scoring (BCS) accurately indicates a cow's nutritional needs for efficient reproductive performance. BCS helps to balance the ration to meet those needs from available

feedstuffs as cost effectively as possible. Therefore, producers that participated in the Iowa Beef Center cow nutrition program were significantly more likely to reduce their overall cost of production. Each $1 in cattle sales results in an additional $2.59 economic output for Iowa. Twenty-eight percent of respondents indicated they reduced their feed costs by $1,250. Considering that this sample is a reasonable representation of all participants in the cow wintering workshops, it can be inferred that 28% of all participants would also show this kind of savings representing $136,500 in reduced costs or increased profits. With the 2.59 economic output factor this results, conservatively, in $353,535 addition revenue in the rural communities.
B. 243 dairy producers and 57 industry partners attended and engaged in the workshops, with post workshop evaluations completed by 227 participants. 99% of participants stated they received 2-5 key take home messages that were important and considered implementation. 96+% participants stated they would make changes or actions as a result of the workshop. An initial 6-month post survey to producers was delayed due to the summer heat stress and associated weather issues; it will be conducted at subsequent on-farm milking workshops in the 2012 spring. Evaluation results are presented in the Evaluation Section.
C. Several participants have indicated an interest in adapting the recommended system on their high tunnels to solve drainage problems. The catchment system is being reviewed by the State and/or Regional NRSC staff for consideration as an environmental initiative that could provide funding assistance to high tunnel growers. By providing educators with resources and basic information on high tunnel construction, maintenance, Extension educators assisted new and expanding fruit and vegetable growers to make more astute decisions and enabled NRCS staff to make suitable decisions regarding applications for the cost-sharing program.

4. Associated Knowledge Areas

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

Outcome #8

1. Outcome Measures

Number of crop and livestock producers who increase their knowledge on marketing, insurance or USDA program alternatives that are consistent with the risk bearing ability of their businesses and their personal preferences for managing risk.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual

2011 29

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A. New common crop Insurance policy (COMBO) basic provisions were implemented in 2011. Producers need to understand the new terminology, how to compare policies, how to choose the right level of coverage, and how to compare the four choices of insurance units because revenue insurance can be used to protect against lower than expected production, which allows grain producers to take advantage of pre-harvest pricing opportunities with minimal risk. The Extension educational program, directed toward crop insurance users in Iowa, streamlined terminology used in the COMBO provisions and made it easier for producers to understand the new terminology so they can make better informed decisions about policy choices.

B. Volatile input prices have increased the risk associated with cattle feeding. Traditional risk management methods use price protection for market prices but may not account for risk in feed and feeder cattle. Margin management is a method that protects prices of outputs and inputs simultaneously.

What has been done

A. Seven crop insurance fact sheets and decision tools were updated to reflect new terminology and provisions from COMBO. These were posted on the Ag Decision Maker website, and two new fact sheets were created. The information files were downloaded 2,796 times and the decision files (electronic worksheets) were downloaded 1,806 times. Five workshops were held in which 52 participants participated in a discussion of the new information and then utilized Internet-based decision tools to analyze crop insurance decisions for their individual situations. Shorter presentations were made at 26 crop production workshops attended by 3,323 producers. Fifteen radio interviews were given.

B. Seven workshops were conducted to demonstrate the use of the "crush margin" method of managing margin management. A hands-on computer simulation called "Margin Maker" was the method used. A total of 81 producers participated in the workshops.

Results

A. Forty-three producers who attended ISU Extension meetings covering the new crop insurance policies responded to a follow up survey. From 51% to 95% correctly answered a series of knowledge questions about the new policies. 70% said that information obtained from an ISU Extension presentation was an important factor in their decision about what type of crop insurance to purchase, and 9% said it was a deciding factor. As a result of the workshops 30% changed their level of coverage, 9% changed their insurance units, and 16% changed the type of policy they purchased.

B. Of those responding to a post meeting survey, 98% increased their awareness of risk management, 90% understand more about how to use hedging, options, price insurance and forward contracting, and 80% learned more about advanced risk management strategies. Attendees indicated that they would put information learned from the workshops into use in their operations. Sixty-nine percent indicated that they planned to manage a more comprehensive risk management program including corn price, feeder cattle price, and price of fed cattle. Also 65% said they planned to start using risk management tools more consistently when opportunities exist. And 31% will start calculating a crush margin at least twice a month for their operation. Utilizing available tools for risk management should improve the future success and economic sustainability of cattle operations.

4. Associated Knowledge Areas

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

Outcome #9

1. Outcome Measures

Number of producers and service providers who learn about crop production and protection strategies that focus on improving agronomic practices.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	2323

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A. Farmers and agribusiness professionals are continuously subjected to promotional advertising and advice from proprietary companies to buy crop production inputs and are often unsure about the validity of what they are told. They need unbiased, research-based information on crop production strategies to make sound management decisions that do not negatively impact their profitability.

B. Agricultural production inputs are perceived as having negative impacts on Iowa's soil and water resources. Adoption of best management practices for crop nutrients will ensure resilient and sustainable global food systems through increasing productivity and profitability. Environmental benefits will include a reduction in nutrient runoff and leaching into the water systems. Citizens benefit through improved national capacity to meet growing food demands while protecting natural resources.

What has been done

A. Meetings and newsletters are two effective ways Iowa State University Extension and Outreach delivers timely crop production information to farmers and agribusiness professionals. The Crop Advantage Series (CAS) is an example of programming by ISU Extension that provides production expertise. More than 300 total meetings at fourteen locations were conducted. Extension specialists also produce at least 15 regional and statewide newsletters covering crop production and protection. In 2011, over 250 articles were published through these newsletters.

An example of a regional newsletter is the electronic "Crop Update" published in northwest Iowa.
B. Newsletter articles were published and education programs delivered related to soil fertility and nutrient management: 7 Integrated Crop Management News articles, four CURRENT TOPIC articles in the Soil Fertility on-line Web site, 8 research progress reports in the Iowa State University Research Farm reports; 4 conference proceeding reports; 26 presentations at producer and agribusiness meetings; a two-day intensive soil fertility short course; 4 webinars; a presentation distributed by DVD for the confinement site and commercial manure applicator certification program; and 4 Agronomy extension nutrient management web sites supported, including the Corn Nitrogen Rate Calculator where the prices of corn and fertilizer nitrogen are used to determine economically based Maximum Return to Nitrogen rates.

Results

A. Attendance of the 2011 Crop Advantage Series was 2,149, which represents 8.2 million acres (31%) of Iowa's 26.3 million acres. Fifty-nine percent of the attendees reported that they improved their profitability from $5.00 to $20.00 per acre (average of $8.00/acre) as a result of information they learned and applied by attending a Crop Advantage Series meeting. The CAS series alone equates to a profitability of over $66 million for Iowa's farmers. The 850 subscribers of the "Crop Update" newsletter, who have direct impact on 1.5 million acres in northwest Iowa, were surveyed about the value of the newsletter. Ninety-six percent of the survey responses indicate an increase in profits per acre as an outcome of using information from the newsletter. Respondents of the survey estimated an average profit of $10 per acre, resulting in $15 million in profitability for northwest Iowa farmers. Seventy percent shared the newsletter with others, furthering Iowa State University's reach and impact; this multiplier effect was not captured in the estimated profits.
B. The Soil Fertility web site had 12,056 visits and 30,005 page views, and the Corn Nitrogen Rate Calculator web site had 17,012 visits and 95,135 page views. Presentations were made to 2,851 producers, agribusinesses, and crop advisers; some attending the Crop Advantage Series. Of the attendees of the Crop Advantage Series, 37% increased their understanding of how specific fertilizer additives slow down nitrification and losses of nitrogen and plan to use them for future nitrogen management in corn production. A survey of southwest Iowa producers and agribusiness professionals indicated that an additional 27% of producers chose to use nitrification inhibitors in their fall-applied ammonia rather than increase the application rate. The average reported rate reduction based on Iowa State University recommendations was 18 pounds per acre (from 181 lbs down to 163 lbs), which is a reduction of 490,000 pounds of fall-applied nitrogen in southwest Iowa alone, with a corresponding positive effect on Iowa soils and water sources in the region.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems
216	Integrated Pest Management Systems

Outcome #10

1. Outcome Measures

Number of farmers and agribusiness professionals who gained knowledge in safe pesticide application through pesticide management recommendations.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	25310

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Safe use of agricultural pesticides by certified applicators, both private and commercial, requires continuous updating on the appropriate application techniques and rates to safeguard Iowa's environment. Iowa State University Extension provides this kind of current education to ensure responsible storage, handling, transport and application of pesticides across Iowa.

What has been done
A total of 15,995 private applicators and 9,315 commercial applicators were trained and certified on pesticide safety topics including: understanding groundwater flow mechanisms, responding to emergencies, an atrazine update, phytotoxicity, and proper pest identification and management.

Results
As a result of pesticide certification training, 15,995 private applicators and 9,315 commercial applicators are storing, handling, transporting and applying pesticides in a safe manner, which benefits the citizens of Iowa and the environment. In addition, the training directly results in jobs retained or created, so 9,315 commercial applicators were able to obtain jobs or continue working in their current pesticide application positions because they are certified. At an average salary of $45,000 per year, this equated to new and retained employment worth $420 million.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems
216	Integrated Pest Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

Flooding in the Missouri Valley region resulted in additional programming regarding risk management options, soil reclamation and fertility implications, and future pest management strategies for affected producers.

Summer heat stress created a lot of problems for dairy producers in 2011. Dairy farm economy was improved compared to 2008-2009. Public and government policies on SCC and EU regulations created concerns, controversy, and opportunities for education venues and adoption of dairy best management practices.

Strong prices for both crop and livestock commodities resulted in increased emphasis on educational programming about farm land financial management values, tax implications, production input for profitability. Changes in weather patterns rapidly affect the type of crops grown, rotations, management timing and pests. Commodity prices shifted crop acreage planting intentions.

In most winters, Iowa hay is adequate to meet the nutritional needs of gestating beef cows when fed free choice. However, the continual rain during the 2010 summer resulted in over mature or rain damaged hay which significantly reduced energy and protein content and therefore decreased the feed value. Livestock educational programs dealt with volatility in production and risk resulting from extreme wet conditions. With more stable climatic conditions, clientele would be less susceptible to risk from weather, and their economic outlook would be more predictable.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

A follow-up survey of a random sample of landowners, tenants and farm managers who attended the ISU Extension and Outreach farm leasing workshops showed that many of them took specific actions as a result of what they learned. The most common change made was to adjust the level of cash rent for 2012 to more closely match current market conditions (79%). Another 51% used the ISU Decision Aid spreadsheet to help them decide what level of cash rent was fair for the coming year. Other behavior changes were: 1)

changing from an oral to a written lease (42%), 2) using the ISU decision tool to test a flexible lease contract (34%), 3) reviewing soil test information (27%), and 4) changing from a fixed to a flexible lease (20%). The average increase in net income as a result of these changes in action was $36.36 per acre farmed or owned, and $16,755 per person responding to the evaluation request. Extrapolating this result to all of the workshop attendees would suggest a total net gain of over $29 million for 2012.

Key Items of Evaluation

Estimated average increase in net income resulting from actions taken as a result of attending an ISU Extension farm leasing workshop (n = 85): By acre, $31.76 (landowners), $38.44 (Tenants), $15.13 (Farm Managers). Total increase per person: $30,771 (landowners), $14,317 (Tenants), $1,319 (Farm Managers).

A one-year post meeting evaluation of dairy performance records (DHIA milk production and milk quality) was given to NW Iowa dairy producers (n = 20) who were using this record system. A randomized matching cohort of 20 dairy producers from NE/E/ SE IA who had these records were also analyzed separately, then data combined and compared to all DHIA DRMS Holstein and all herds (11,760 and 14,052 herds respectively).

- Participants averaged 179 cows/ herd and improved milk production 575 lbs/cow/year for an increased milk income of $20,585/herd ($20/cwt milk) or $823,400 across all herds.
- Initial herd weighted somatic cells counts averaged 329,000 cells ml, 196,000 cell/ml at 6 mo post workshop and 133,000 cells/ml 1 year post workshop. A milk quality premium of $0.50/100 lbs milk was associated with an increased income of $815,040 or $20,376/herd/year.
- Total increased revenues for all herds were $1,638,440, or $40,961/herd or $229/cow.
- In comparison, all DRMS herds dropped 169 lbs milk/cow/year or -$5103/herd with minimal SCC drop.
- Iowa dairy herds who attended our milk quality workshop showed significantly greater milk production increases as well as somatic cell decreases compared to all DRMS cohort herds.

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Natural Resources and Environmental Stewardship

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	6%		0%	
102	Soil, Plant, Water, Nutrient Relationships	15%		18%	
111	Conservation and Efficient Use of Water	8%		3%	
112	Watershed Protection and Management	5%		9%	
121	Management of Range Resources	0%		2%	
124	Urban Forestry	0%		2%	
131	Alternative Uses of Land	0%		4%	
132	Weather and Climate	5%		8%	
133	Pollution Prevention and Mitigation	6%		8%	
134	Outdoor Recreation	0%		9%	
135	Aquatic and Terrestrial Wildlife	0%		17%	
136	Conservation of Biological Diversity	0%		13%	
141	Air Resource Protection and Management	0%		1%	
307	Animal Management Systems	6%		0%	
315	Animal Welfare/Well-Being and Protection	5%		0%	
401	Structures, Facilities, and General Purpose Farm Supplies	6%		0%	
403	Waste Disposal, Recycling, and Reuse	5%		1%	
405	Drainage and Irrigation Systems and Facilities	10%		0%	
605	Natural Resource and Environmental Economics	15%		5%	
723	Hazards to Human Health and Safety	8%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890

Plan	13.5	0.0	23.0	0.0
Actual Paid Professional	35.5	0.0	15.4	0.0
Actual Volunteer	0.0	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**
1084901	0	849589	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
1084901	0	849589	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
1356859	0	4016504	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The following basic to applied research activities will allow for attainment of the four program goals.

• Address air and water quality along with other environmental issues of Iowa through research, education, and extension programs targeted at solving environmental problems of producers, citizens, public health officials, and regulators.
• Increase the research and adoption of best management conservation practices, crops, and cropping systems that control soil erosion, minimize sediment transport, and reduce nutrient export. Increase the research and adoption of practices, crops, and cropping systems that reduce nitrate export.
• Approach water quality and quantity issues from a watershed perspective using adaptive management principles the link the private and public sectors.
• Develop better models and tools to be used to evaluate the effects of changes in the mix and location of crop and livestock systems due to climate change.
• Identify site specific strategies and facilitate the implementation of these strategies to improve air quality and address related concerns, particularly with respect to siting and operations of confined-animal feeding operations and neighbor-to-neighbor relationships.
• Understand and evaluate the economic impact of management of natural resources including the economic viability of alternative crops, cropping practices, and cropping systems, and the economic and environmental benefits of such alternatives.
• Quantify the non-market and market values associated with our Iowa natural resources including forests, natural areas/abandoned pasture, CRP, wildlife, energy, and community resources.
• Research ways to conserve the use of energy inputs used in the production of food, feed, fiber and biofuels with a particular view towards carbon reduction.

The following extension/outreach activities will allow for attainment of the four program goals.

• Appropriate curriculum for targeted groups, fact sheets, and web access tools for decision making.
• Targeted programming to address policy issues as they arise including response to public comment

documents, development of hard copy materials and resources for regulators and policymakers.

- Produce, update or revise handbooks, newsletters, and bulletins as appropriate.
- Hold workshops, field days, farm/field visits, and satellite and web based sessions as appropriate.
- Develop strategies and programs to increase community (citizen) involvement, especially related to private and public natural resources.
- Develop and execute educational programs about conservation program in the new farm bill.
- Develop and execute educational programs about indices and diagnostic tools (e.g. P Index) that can be used to improve nutrient management.
- Develop and execute educational programs on methods to conserve and produce biorenewable energy.

Faculty participate in the following associated multistate research committees: NC1032, NC1034, S1025, S1028, S1032, S1042, W2004, W2128, W2133, and W2188.

2. Brief description of the target audience

This program focuses on the private and public sectors. The audiences to be engaged in research and extension activities associated with this program include: crop and livestock producers, processors and agribusinesses; grower organizations and related industry; landowners, homeowners, and private citizens; public health officials, state and federal agricultural and natural resource agencies, regulators, and policy makers; environmental groups; agricultural and natural resource scientists, engineers and economists; watershed management groups and stakeholders; and those working with fisheries and wildlife.

3. How was eXtension used?

Community of Practice serves as a resource on Animal Manure Management: The Livestock and Poultry Environmental (LPE) Learning Center was established to improve the connection between national experts and those advising animal producers on environmental issues. With the development of eXtension's community of practice (CoP) concept, the Learning Center became the CoP resource for the public on animal manure management issues. Iowa State University is part of a team of about 60 national experts who have developed a content-rich animal manure website that provides current education and research on emerging animal waste issues. Webcast seminars have addressed the value of manure, alternative technologies, and nutrient concerns from a national perspective. As hot topics materialize, presentations on Changing Concentrated Animal Feeding Operations (CAFO) Regulations and Pathogens have been added. The webinars are accessible to the public nationwide.

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	160171	1875611	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 2

Patents listed
Methylocystis Strain SB2 Materials and Methods (A Novel Facultative Methylotroph, Methylocystis daltona SB2); Inventors: A DiSpirito, W Gallagher, S Hartsel, J Im, SW Lee, J Semrau, M McEllistrem, S Yoon; filed 08/04/2011.

Activity of Corn Gluten Meal as an Herbicide Using Dry Acid Treatment (Improving the Efficacy of Corn Gluten Meal as an Herbicide Using Dry Acid Treatment); Inventors: N Christians, R Hippen; filed 08/05/2011.

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	42	137	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of producers, agribusiness professionals, and land-owners who attend face-to-face educational activities, including individual consultations.

Year	Actual
2011	86989

Output #2

Output Measure

- Number of producers, agribusiness professionals and land-owners who subscribe to newsletters and access web-based resources.

Year	Actual
2011	962893

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of producers that participate in programming directly focused on increasing the number of livestock production sites that adopt practices that reduce impacts to air resources.
2	Number of Iowans that participate in programming directly focused on the adoption of practices that protect natural resources including woodlands, wildlife, energy, and community resources.
3	Number of producers and service providers who participate in programs designed to increase the adoption of conservation systems on Iowa's crop acreage.
4	Number of producers increasing the efficiency of manure and crop nutrient utilization while minimizing surface run off and preserving ground water quality.
5	Number of Iowa citizens who participate in learning activities that focus on improving water quality and quantity.
6	Number of producers participating in programming on foaming and deep-pit manure pumping safety.

Outcome #1

1. Outcome Measures

Number of producers that participate in programming directly focused on increasing the number of livestock production sites that adopt practices that reduce impacts to air resources.

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Number of Iowans that participate in programming directly focused on the adoption of practices that protect natural resources including woodlands, wildlife, energy, and community resources.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Number of producers and service providers who participate in programs designed to increase the adoption of conservation systems on Iowa's crop acreage.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	17102

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Farmers think that conservation tillage practices reduce crop stands or yields so they are unwilling to adopt these practices. Improved water quality is a concern of the general public. Conservation practices are needed to reduce soil erosion, which can lower sediment loading of streams and lakes and improve water quality. Increased use of cover crops also has the potential to reduce soil erosion and nitrate leaching, which positively impacts water quality. Increased adoption of conservation practices is necessary to reduce negative downstream water quality impacts from agricultural production. Farmers need to be shown that adopting conservation practices is an

environmentally sustainable approach to farming.

What has been done
Educational programs and field demonstrations on conservation tillage were held. The Iowa Learning Farms Project rainfall simulator and conservation station visited approximately 65 locations in late 2010 and early 2011 to show the impact of residue cover and use of conservation practices on soil erosion to broad stakeholder groups. No-till or reduced tillage and cover crops field days were conducted in various areas of Iowa. The Iowa Learning Farm Project continued field demonstrations on producers' fields where conventional tillage systems were compared to conservation tillage systems and where winter rye cover crops were compared to systems without winter rye cover crops. The Iowa Learning Farms project has produced educational videos on implementing grassed waterways and on adding a cover crop in a corn-soybean rotation as additional outreach tools. These videos provide in-depth explanations and instructions for implementing these agricultural best management practices. A monthly conservation webinar series was started in January 2011 to cover important conservation related topics.

Results
Consistent with previous reporting, there continues to be an increasing number of producers interested in adoption of conservation practices -- specifically reduced tillage practices that have the potential to save natural resources and provide some economic benefit for the producer. In addition, there is increased interest in the use of winter cover crops. Activities associated with the Iowa Learning Farms (ILF) program have been evaluated to assess the change in behavior since 2008. Results are in the Evaluation section.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
403	Waste Disposal, Recycling, and Reuse
405	Drainage and Irrigation Systems and Facilities
605	Natural Resource and Environmental Economics

Outcome #4

1. Outcome Measures

Number of producers increasing the efficiency of manure and crop nutrient utilization while minimizing surface run off and preserving ground water quality.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	394

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A. Livestock producers in Iowa have seen a progression of regulations and compliance enforcement throughout the past two decades. Awareness through Extension meetings and information put out by commodity groups has played a substantial role in bringing confinement feeding operations and large Concentrated Animal Feeding Operation (CAFO) feedlots into compliance. For small to medium-sized feedlots and dairies which may or may not be classified as CAFOs, the education and outreach was not formalized prior to the EPA beginning their recent compliance reviews.

B. A well-educated nursery and landscape workforce is essential in creating residential and commercial landscapes that are sustainable and of benefit to the larger environment. There will be a long term benefit to the property owners as well as the local environment and ecosystem as best landscape management practices are incorporated.

What has been done

A. A total of seven workshops were held, three in NW-W Iowa at the end of March 2011 and four in NC-NE-E Iowa at the end of June 2011. A total of 383 people attended the seven workshops and received materials about current regulations, manure management and resources, including technical and financial assistance.

B. Twenty online training modules were provided for Iowa Nursery and Landscaping Association members. Eleven people took the training, 5 of which used it for professional development. The modules replaced the printed training manuals which were used prior to 2007. Additionally, all Iowa Nursery & Landscaping Association members have access to the modules and each company can use them to meet their own educational needs such as individual professional development or new employee training.

Results

A. Of the 383 people who attended, 179 completed a post-workshop evaluation. 169 respondents (94%) indicated they have a better understanding of the criteria, including numbers of animals and discharge definitions that might imply their operation is a CAFO; 172 respondents (96%) reported they understand the definition of a man-made device carrying feedlot runoff; 109 (61%) reported they had traced runoff from their feedlot or dairy to see if it reached a water of the state, whereas 22% had not traced their runoff, and 15% said it did not apply; 163 (91%) responded they now had a better understanding of the records that need to be kept; 161 (90%)

reported they now know where to find resources for technical and financial assistance. Only 3% of respondents said they would apply for a medium-CAFO permit, whereas, 21% indicated they would not apply for permit, 51% reported they are unsure if they will apply for a medium-CAFO permit, 6% reported this did not apply, and 18% did not respond. This suggests that the workshops have raised awareness and have improved decision-making about how respondents can be in compliance and improve water quality.
B. Participants who took the Iowa Certified Nursery Professional exam in January 2009 and 2010 completed a 19-question survey about the modules. A Likert-type scale (1=excellent; 5=poor) was used in combination with open-ended questions. The question "My overall rating of these online training modules is:" received a 1.8 rating. In addition, the percentage of participants who pass the exam has increased from 54% before the online modules were used to 92% the past two years. This increase suggests the modules are helping people better prepare for the certification exam.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
405	Drainage and Irrigation Systems and Facilities

Outcome #5

1. Outcome Measures

Number of Iowa citizens who participate in learning activities that focus on improving water quality and quantity.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Number of producers participating in programming on foaming and deep-pit manure pumping safety.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	5854

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
During the past two years, multiple flash fires and explosions have occurred on swine farms when agitating and/or pumping from deep pits that are experiencing foaming. Awareness of the cause of this occurrence among producers was extremely low and the need for education to reduce the potential for fires and explosions and injury or death to humans and pigs was much needed. The desired change is to increase awareness of the risk and provide management decisions that can prevent explosions and flash fires.

What has been done
A 15 minute video was developed to highlight management practices that can be employed to reduce the potential for flash fires and explosions.

Results
The video produced is publicly accessible via the IMMAG video page. This video was also used in Manure Applicator Certification and by the end of 2011 will have been watched by nearly 5,000 commercial and confinement site applicators licensed in the state of Iowa. The video is also a major source of education and outreach in other states that are experiencing this issue. The video has also been embedded on the Iowa Pork Producers Association web page and the U of MN manure web page. As stated earlier, the goal at this time is to raise awareness of the risk of explosions and fire. The video has been viewed more than 854 times and is the 5th most watched video in the ISU Extension and Outreach video catalog. Plans are underway to incorporate a survey instrument into the video so that we can measure changes that have or will occur as a result of watching the video.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

From the Iowa Learning Farms (ILF) evaluation, 83% of farmers attending ILF field days have made a change in their behavior:

- 31% of farmers increased surface residue management on 32,087 new acres of strip till or no till since 2008
- 428 = average number of increased acres put into no-till/strip-till
- 1600 = new acres with cover crops in 2010/2011
- 68% have installed waterways, buffers or terraces in 2010

Key Items of Evaluation

Adopting the conservation practices as described by the Iowa Learning Farm survey will decrease the potential loss of soil through erosion, thereby improving natural landscape and waterways.

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Sustainable Energy - Biofuels and Biobased Products

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	0%		12%	
102	Soil, Plant, Water, Nutrient Relationships	8%		24%	
111	Conservation and Efficient Use of Water	8%		0%	
125	Agroforestry	8%		0%	
131	Alternative Uses of Land	8%		0%	
136	Conservation of Biological Diversity	8%		0%	
202	Plant Genetic Resources	0%		10%	
205	Plant Management Systems	5%		9%	
206	Basic Plant Biology	0%		6%	
302	Nutrient Utilization in Animals	8%		0%	
401	Structures, Facilities, and General Purpose Farm Supplies	0%		6%	
402	Engineering Systems and Equipment	8%		1%	
403	Waste Disposal, Recycling, and Reuse	8%		0%	
511	New and Improved Non-Food Products and Processes	7%		16%	
512	Quality Maintenance in Storing and Marketing Non-Food Products	3%		0%	
601	Economics of Agricultural Production and Farm Management	7%		0%	
602	Business Management, Finance, and Taxation	7%		0%	
603	Market Economics	0%		8%	
605	Natural Resource and Environmental Economics	7%		0%	
610	Domestic Policy Analysis	0%		8%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Extension	Research

Year: 2011	1862	1890	1862	1890
Plan	7.0	0.0	7.0	0.0
Actual Paid Professional	5.6	0.0	10.4	0.0
Actual Volunteer	0.0	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**
170121	0	589843	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
170121	0	589843	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
20048	0	2765462	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Iowa State University research and extension focused its resources and efforts on developing improved crops and plant materials for use as feedstocks to produce biofuels and biobased products, while still producing adequate food and feed supplies; on developing agronomic efforts to produce these feedstocks in sustainable ways to mitigate environmental risks and educate targeted audiences on production strategies; on developing new harvesting, storing and transporting systems for these new feedstocks; and on adopting new conversion processes that are more efficient, use less energy and water, and produce value-added co-products. These technologies will be integrated so that they work as a complete system and the ISU BioCentury Research Farm will play a key role.

Faculty participate in the following associated multistate research committees: NC1178, NC1183, NC213, NE1037, NE1042, S1041, SERA38, and W2128.

2. Brief description of the target audience

Efforts targeted basic human needs for environmentally sustainable energy and consumer goods (e.g. building construction materials, plastics and adhesives) and to provide producers with more efficient crops and production systems, rural communities with new employment opportunities and economic development, processing companies with advanced conversion technologies, and all of us because we all need inexpensive and environmentally acceptable forms of energy. More specifically, this work targets the general public, farmers and land managers, agricultural professionals, extension educators, state and federal agency personnel, the bioenergy industry, the scientific community, academic and industry researchers and engineers, regulators and legislators.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	6748	3782	0	0

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

Patent Applications Submitted

Year: 2011
Actual: 1

Patents listed
Oil Separation from Microalgae; Inventor: T. Wang; filed 03/15/2011.

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	3	34	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Biorenewable companies and agricultural producers attending on-site educational activities: workshops, conferences, industry roundtable discussions, field events, and professional development.
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Biorenewable companies and agricultural producers attending off-site educational activities.

Year	Actual
2011	500

Output #3

Output Measure

- Number of individuals interested in biorenewables who subscribe to newsletters and access web-based resources.
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of producers and service providers who attend programs designed to increase the awareness of new crop opportunities and varieties appropriate for bioenergy production.
2	Number of Iowa feedlots that regularly feed DGS to reduce cost of gain.
3	Number of individuals representing biorenewable companies and agricultural producers who learn new technologies related to biomass production, harvest, storage, and transportation.
4	Number of individuals representing biorenewable companies who learn new technologies related to biomass processing/refining.

Outcome #1

1. Outcome Measures

Number of producers and service providers who attend programs designed to increase the awareness of new crop opportunities and varieties appropriate for bioenergy production.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	2540

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A. There is an increasing demand by livestock production systems to use corn stover in feeding and bedding needs. At the same time, society is demanding solutions to issues such as increasing levels of greenhouse gases in the atmosphere and water quality impairment due to sediment and nutrient enrichment. While corn is viewed as a significant potential source of cellulosic feedstock for energy production, the impacts of large-scale corn stover or other crop biomass removal on the soil resource, sustainability of crop production and environmental conservation are not well known.

B. Much research and information is being produced about biofuels for sustainable energy. Understanding and sorting through the many reports and details can be confusing to farmers and processors who are interested in being involved in this effort.

C. Among renewable energy sources, only biomass can provide fuel and electricity in a form and scale that is compatible with existing transportation and power generation infrastructure. Unlike wind and solar energy, biomass can be converted into liquid fuel similar to that made from petroleum, or it can be stored to generate electricity on-demand, as is currently done with coal. However, there is a lack of information on reliable crop production metrics at a commercial scale and on N cycling in biomass crops. In addition, there are limitations imposed by rhizomes on Miscanthus planting.

What has been done

A. The project addresses how much corn residue can be removed without degrading soil and environmental quality, soil organic C sequestration, and agronomic sustainability in Iowa and the Midwest region. Field studies were established to determine the short- and long-term impacts of different corn residue removal levels, N fertilization rates, and tillage systems on soil quality, greenhouse gas emissions, nutrients cycling, and productivity. Management effects on carbon

sequestration and soil productivity, including the impacts of crop residue removal on soil organic carbon (SOC) and erosion under continuous corn generated data that was presented at field days, workshops, and other educational events, such as the Extension-sponsored Integrated Crop Management (ICM) Conference. More than 500 participants of the ICM Conference attended the crop residue session and increased their awareness of production strategies.
B. A Biobased Energy Research and Information Exchange Committee was formed to a) exchange information, strengthen partnerships and facilitate the coordination of research and educational efforts relating to renewable and bio-based energy; and b) to strengthen partnerships between research and extension professionals, industry partners, end users, government agencies, policy makers and other effected parties. A Bioenergy Bootcamp for academic researchers, industry representatives, and government employees working on biobased energy production was organized. Forty participants who attended the camp increased their awareness about bioenergy. The camp consisted of 12 research presentations, an ethanol plant tour, and networking opportunities for the participants. Dr. Chad Hart led extension sessions for agricultural lenders and extension educators in Iowa. His sessions explored the market forces and government policies that are shaping biofuel development.
C. In 2009, switchgrass plots were established with fertilizer treatments applied to individual plots in 2010 and 2011. Each year, data were collected on switchgrass establishment, growth and biomass yield and shared with colleagues throughout the country with analogous research plots. Data on plant growth, development and yield were collected and analyzed throughout the 2011 growing season. Measurements of above- and below-ground biomass were taken and harvested samples were analyzed for carbon (C) and N content. Larger samples were converted into bio-oil through fast pyrolysis and analyzed for N content to determine the relationship between switchgrass N content and that which ends up in bio-oil.

Results

A. Preliminary findings for 2009 to 2011 include: no negative impacts on corn yield due to crop residue removal rates. On the contrary, an improvement in corn yield was observed with the residue removal, especially on wet and cold poorly-drained soils. Application of N fertilization greater than 150 lbs/acre did not significantly increase corn stover or root biomass, but it led to an increase in N2O emissions. Also, removing 50% or greater of corn crop residue led to significant decrease in soil C sequestration potential and increase in CO2 emission from soil under both chisel plow and no-tillage systems. However, no-tillage showed less soil C loss than chisel plow, primarily due to colder soil temperatures and less soil disturbance, where low annual CO2 emissions were observed.
B. As a result of the Bioenergy Bootcamp, several academic teams from multiple universities have been formed to pursue bioenergy and climate change research and outreach grants from USDA and NSF.
C. Data showed that switchgrass is best established under a corn canopy, changing the way that colleagues in the Midwest now recommend planting switchgrass on previously farmed land. Two manuscripts and two extension factsheets are being written. Results were disseminated through the US Dept. of Energy Regional Feedstock Program, resulting in website updates (http://www.sungrant.org/Feedstock+Partnerships) and presentations that increased awareness for about 2000 stakeholders and lawmakers. Results on plant growth and yield were presented at an international conference, three regional conferences and two field days and included in ISU farm publications. The researcher was able to establish the relationship of N in biomass feedstock to N found in bio-oil following fast pyrolysis. If this relationship proves stable, it can dramatically impact the way fuel companies assess biomass feedstock and the price they pay to producers. The findings have helped farmers make critical production decisions when planting switchgrass.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
125	Agroforestry
131	Alternative Uses of Land
205	Plant Management Systems
511	New and Improved Non-Food Products and Processes
601	Economics of Agricultural Production and Farm Management
605	Natural Resource and Environmental Economics

Outcome #2

1. Outcome Measures

Number of Iowa feedlots that regularly feed DGS to reduce cost of gain.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Number of individuals representing biorenewable companies and agricultural producers who learn new technologies related to biomass production, harvest, storage, and transportation.

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Number of individuals representing biorenewable companies who learn new technologies related to biomass processing/refining.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities

Brief Explanation

Interest in and support and demand for alternative, sustainable energy sources increase along with the rising cost of the more traditional fossil fuels.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

This program was not evaluated this year.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Food Safety

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
307	Animal Management Systems	10%		0%	
308	Improved Animal Products (Before Harvest)	5%		0%	
315	Animal Welfare/Well-Being and Protection	5%		0%	
503	Quality Maintenance in Storing and Marketing Food Products	5%		0%	
703	Nutrition Education and Behavior	20%		0%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	5%		7%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	25%		83%	
723	Hazards to Human Health and Safety	20%		10%	
806	Youth Development	5%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	7.0	0.0	20.0	0.0
Actual Paid Professional	20.7	0.0	4.4	0.0
Actual Volunteer	0.0	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**
560565	0	220486	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
560565	0	220486	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
734140	0	926721	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

• Conduct workshops and facilitate meetings. Workshops include ServSafe® Certification food safety, food preservation, HACCP implementation and compliance, GAPS preparation for fruit and vegetable growers, and local food systems.
• Develop food safety educational materials and resources, such as web based tools and Extension publications.
• Provide training and technical assistance such as fundamental food safety training for volunteer staffed events, line level employees, and respond to specific questions related to application of food safety principles.
• Nutrition education programs for youth and adults through EFNEP and FNP.
• Provide training and technical assistance in the dairy, beef and swine industries.
Faculty participate in the following associated multistate research committees: NC213, NC1023, NC1031, NC1183, S294, S1027, and S1033.

2. Brief description of the target audience

• Food growers, food processors, foodservice management and staff in commercial and noncommercial operations, consumers, food providers such as food pantries, and food stand volunteers will be served.
• EFNEP/FNP target low-income families with children age ten and under and youth in grades K through 6th.
• Scientific community and industry.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	7466	6654669	39	528

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	9	30	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of consumers and producers attending workshops on trends and opportunities related to local and regional food systems.
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of consultations with small farmers to match their strengths, weaknesses, and personal situations with particular local food enterprises and markets.
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of consumers and producers who subscribe to newsletters and access web-based resources.
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Number of adult participants in Extension programs on food safety.

Year	Actual
2011	4914

Output #5

Output Measure

- Number of hits on Iowa State University Extension food safety project websites.

Year	Actual
2011	6650488

Output #6

Output Measure

- Number of individuals certified to implement Hazard Analysis and Critical Control Point (HACCP) in meat poultry and egg production plants.

Year	Actual
2011	261

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of small farmers who understand how to participate in local and regional food markets and how to establish new food production enterprises in their farm businesses.
2	Number of producers who integrate local food production into their businesses and grow that enterprise.
3	Number of consumers who learn how to make informed choices regarding the opportunities offered by local and regional food systems.
4	Number of individuals certified to implement Hazard Analysis and Critical Control Point (HACCP) in meat, poultry, and egg production plants.
5	Number of people receiving food safety certification.
6	Percent of adult EFNEP/FNP graduates with a positive change in food safety practices.
7	Number of consumers who understand modern livestock practices as they pertain to animal health and comfort, quality and safety.
8	Number of dietary professionals that understand modern livestock practices as they pertain to animal health and comfort, quality and safety.

Outcome #1

1. Outcome Measures

Number of small farmers who understand how to participate in local and regional food markets and how to establish new food production enterprises in their farm businesses.

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Number of producers who integrate local food production into their businesses and grow that enterprise.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Number of consumers who learn how to make informed choices regarding the opportunities offered by local and regional food systems.

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Number of individuals certified to implement Hazard Analysis and Critical Control Point (HACCP) in meat, poultry, and egg production plants.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	261

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
HAACP (hazard analysis and critical control points) is an essential program for food safety and to protect public health. The educational program provides a systematic preventative approach to food safety that addresses physical, chemical and biological hazards as a means of prevention of food safety problems.

What has been done
Regularly scheduled HAACP training sessions have been developed and conducted for participants in the animal protein processing industry. These are held at Iowa State University's Animal Science Meat Lab in Ames. More than 275 industry personnel were trained in 2011 in HAACP.

Results
Personnel in the animal protein processing industry that participated in the HAACP training at ISU were given exit examinations to insure their mastery of the information that was presented. More than 95% of the participants passed these exit examinations. Follow-up interviews with the participants found that the vast majority of them were highly pleased with the training they were given and they had implemented at least some of the information. In addition, all supervisors in charge of the participants cited the importance of this training in maintaining the HAACP and ISO certification status of their processing facilities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
723	Hazards to Human Health and Safety

Outcome #5

1. Outcome Measures

Number of people receiving food safety certification.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	2370

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A. The burden of food borne disease in the United States is significant on both the well-being of the economy as well as human health. Mitigation of the high rates of food borne illness must start at the sources -- the handling of food in retail by employees and by consumers. In Iowa, Norovirus is the leading cause of food borne illness and is mainly contracted in foodservice establishments. Recent outbreaks from fresh produce have resulted in the need to train farmer market vendors and other small to medium size farmers about good agricultural practices. Enteric bacteria such as Salmonella and E. coli cause significant amounts of illness also.

B. In order for the producer to market pigs to a major processor they are required to have taken Pork Quality Assurance Plus (PQA+) and Transport Quality Assurance (TQA) training and passed a certification exam. They are also required to conduct an internal assessment of their operation, and be randomly audited by a third party. But more importantly, the vast majority of producers genuinely care for their animals and their good health and wellbeing. PQA+ training increases producer market access and addresses their concern for the health and wellbeing of their animals.

What has been done

A. Food safety education included certification programs and training sessions delivered via direct and indirect methods. ServSafe®, developed by the National Restaurant Association, consists of at least eight hours of direct training and successful completion of a certification exam. ISU Extension and Outreach has been a key provider of food safety education in Iowa. During this reporting period, 912 people enrolled in a total of 70 ServSafe® classes through ISU Extension and Outreach. Other direct food safety programs focused on safe food handling, HACCP plans in schools, on farm food safety, cleaning and sanitizing, hand washing, safe operations of food stands and food pantries, and produce safety. Health fairs, Answer Line, interactive web-based lessons, streaming videos, and podcasts on the Extension and Outreach Food Safety web site were examples of indirect educational efforts.

B. PQA+ training sessions for certified trainers, pork producers, swine transport personnel, and youth involved in swine programs have been held at various sites across the state of Iowa. In addition, IPIC personnel have served on the committees that developed these quality assurance programs at the national level. More than 1600 Iowans involved in the pork industry have been trained and/or certified in the area of pork quality assurance in 2011.

Results

A. Of the 912 individuals who participated in the ServSafe® food safety certification training, 770 earned certification for a pass rate of 84.4%.

B. PQA+ training has had several positive outcomes:

* It has raised the awareness of all segments of the pork food chain about the broad aspects and benefits of animal health and well-being.
* Stimulated positive management actions that will maximize animal care and well-being.
* Allowed pork processors throughout the country to show a positive and documented response to national concerns about the health and well-being of pigs that supply protein to consumers.
* The number of pork producers that pass the PQA+ certification test is greater than 98% for the past three years.

4. Associated Knowledge Areas

KA Code	Knowledge Area

307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
315	Animal Welfare/Well-Being and Protection
503	Quality Maintenance in Storing and Marketing Food Products
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #6

1. Outcome Measures

Percent of adult EFNEP/FNP graduates with a positive change in food safety practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	71

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Those who participate in EFNEP and FNP are asked about food safety related behaviors at entry into and exit from the programs. Depending on the behavior, up to 80% of participants do not exhibit safe food handling practices in their own homes. Many participants are either pregnant or parents of infants and toddlers, age groups that are at high risk for contracting food borne illnesses.

What has been done
Those who participate in EFNEP and FNP receive a minimum of eight nutrition education lessons. Of these lessons, most have a food safety component. The sixth lesson, in particular, addresses the concepts of clean, separate, cook (including how to use a food thermometer), and chill.

Results
By completion of the EFNEP and FNP program, 71% of participants from 2011 showed improvement in their food safety related behaviors. Furthermore, after completion of the program, 89% of participants indicated that they exhibit safe food handling practices in their homes.

4. Associated Knowledge Areas

KA Code	Knowledge Area

703	Nutrition Education and Behavior
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
723	Hazards to Human Health and Safety

Outcome #7

1. Outcome Measures

Number of consumers who understand modern livestock practices as they pertain to animal health and comfort, quality and safety.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	3900

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The large percentage of the US population who lives in an urban or suburban environment is disconnected from agriculture and food production. At the same time, there is increasing interest and concern in the general population about food safety, quality, animal health and wellbeing, farm systems that produce food, and sustainability. Consumers and the public need access to unbiased information and educational events that can enhance their knowledge in these areas in order to make sound nutrition decisions /practices.

What has been done
ISU Extension Dairy Team partnered with Iowa's dairy producer and industry associations, other farm and commodity organizations (ISU site) and the regional dairy check-off organization, Midwest Dairy Association, to plan and host 3 Dairy Farm Open House workshops. The purpose was to provide experiential events incorporating a tour of a dairy with designated stations to showcase and educate consumers on specific attributes of dairy farms (animal comfort and health, milking practices, product safety and quality, environmental stewardship). A post workshop survey to rate participants' experience of the dairy tour, assess their knowledge and trust of dairy practices, and evaluate their interests in the dairy industry and dairy products was conducted at 2 sites (1600 attendees).

Results
3900+ participants attended the Dairy Open House workshops, many with families and young children; most participants were from non-agricultural backgrounds; 325 post event surveys were completed.

* 99% rated successful/educational (85% rating excellent; 13% rating very good (3.93/ 4.00 rating).
* Prior-workshop, 71 had a positive (60% extremely positive) opinion and trust in dairy farms.
* Post-workshop, 97% believed dairies provided the best care and handling of animals.
* Post-workshop, 94% believed dairies are protective of the environment and excel at stewardship.
* Post-workshop, 99% stated dairies provided extremely safe and wholesome milk and dairy products.
* 100% supported growth of the dairy industry in Iowa.
* Post-workshop, 98+% stated modern dairies and dairy practices were impressive and had extreme confidence and trust in dairy farms and the dairy industry.
* Participants' opinion of modern dairies following the event was positively and significantly increased.
* Participants' main issues encompassed questions regarding nutrient and environmental management.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
315	Animal Welfare/Well-Being and Protection
503	Quality Maintenance in Storing and Marketing Food Products
703	Nutrition Education and Behavior
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #8

1. Outcome Measures

Number of dietary professionals that understand modern livestock practices as they pertain to animal health and comfort, quality and safety.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	125

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Differential labeling is confusing to consumers, who also have many interests and questions regarding how their food is produced, the quality, safety, and assurance of animal wellbeing, farm sustainability, and dairy product quality and safety. Dairy grocer case managers and in-store dietary professionals (only some stores) are often the front line and only source of credible information and recommendations for consumers and the public. Many of these professionals have never been exposed to agriculture, farms, and different dairy production systems and practices which form the basis for the great variety of dairy products as well as consumers' attitudes, understandings, and choices.

What has been done

Two all-day dairy academies (which included both on farm and milk processing plant tours and education modules as well as other presentations on dairy practices, dairy sustainability, and animal health and wellbeing were conducted for dairy grocer case managers and in-store dieticians and health professionals by ISU Extension and Outreach and the Midwest Dairy Association. Pre- and post-tests of attendees were conducted to determine their understanding of dairy facts and knowledge as well as a personal satisfaction survey.

Results

100% of participants surveyed ranked the dairy academies as highly effective educational events and a highly credible, understandable source of dairy practices and information. There was a 67% increase in post workshop test scores compared to pre workshops scores. Dairy grocer case managers rated the academies as the most highly effective educational training and workshop of their careers. 100% stated they had greater understanding of dairy practices and dairy sustainability, and would use this information with their peers and clients. Grocer case managers estimated individual interactions with > 1000 customers/year and felt they were the sole person at the store to respond to dairy issues and questions. In-store dieticians also highly ranked the information and education very highly, 100% planned future use with peers and clients, and estimated 300+ individual clients and contacts/year. This program received the Central States National Agri-Marketing Association (NAMA) regional award for agricultural education programs and best of show award. This program then received the NAMA National Best of Show Award for agricultural education programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
315	Animal Welfare/Well-Being and Protection
703	Nutrition Education and Behavior

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (loss of staff due to budget cuts)

Brief Explanation

Portions of Iowa experienced severe flooding during the growing season. This impacted livelihoods of many, and the ability to pursue continuing education through Extension and Outreach programs. The Food Safety Modernization Act was passed December of 2010, along with the Healthy Hunger Free Kids Act. Both federal legislative acts required changes in operations related to menu planning, and food selection and handling. The state of Iowa is in the process of adopting Food Code 2009 with the need to inform food retailers about new food safety requirements. The state of Iowa is seeing increased growth of minorities, predominantly Hispanics. This necessitates curriculum adaptations for education and new delivery methods. Due to the poor economy, more Iowa children are food insecure, with those qualifying for free and reduced priced meals at schools increasing. Consumer interest in home gardening and food preservation has led to an increase in requests for food preservation information.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

- 84.4% of ServSafe participants become certified.
- 71% of EFNEP and FNP participants showed improvement in food safety behaviors during the program.
- 89% of EFNEP and FNP participants after completions of the program report exhibiting safe food handling practices in their homes.

Key Items of Evaluation

- 84.4% of ServSafe participants become certified.
- 71% of EFNEP and FNP participants showed improvement in food safety behaviors during the program.
- 89% of EFNEP and FNP participants after completions of the program report exhibiting safe food handling practices in their homes.

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Childhood Obesity -- Prevention

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	100%		100%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Actual Paid Professional	10.7	0.0	1.1	0.0
Actual Volunteer	0.0	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
53030	0	72280	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
53030	0	72280	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
294322	0	428172	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Conduct workshops and meetings.
- Develop products, curriculum, and other educational resources.
- Provide training and technical assistance.

- Facilitate community advocacy.
  Faculty participate in the relevant multistate research committee W1005.

2. Brief description of the target audience

- School aged youth, child care providers, school staff and other adult mentors of youth.
- Researchers in the fields of economics, public health, and nutrition; policymakers charged with improving family well-being; program administrators overseeing food assistance and other assistance programs; and Extension field staff charged with improving the well-being of families in Iowa and elsewhere.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	3444	37471	13870	10946

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

Patent Applications Submitted

Year: 2011
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	4	14	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of youth receiving educational programming related to nutrition, physical activity, and health promotion.

Year	Actual
2011	13870

Output #2

Output Measure

- Number of adults who impact youth receiving educational programming related to nutrition, physical activity and health promotion.

Year	Actual
2011	27262

Output #3

Output Measure

- Number of professionals who impact youth receiving training related to nutrition, physical activity and health promotion for youth.

Year	Actual
2011	1764

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percent of youth participants reporting increased intake of milk.
2	Percent of youth participants reporting increased intake of fruit.
3	Percent of youth participants reporting increased intake of vegetables.
4	Percent of youth participants reporting increased physical activity.
5	Percent of childcare training participants reporting preparedness to apply or teach health promoting dietary behaviors.

Outcome #1

1. Outcome Measures

Percent of youth participants reporting increased intake of milk.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The 2010 Dietary Guidelines for Americans recommend that children consume three cups of low-fat or fat-free milk or milk products each day. The Youth Risk Behavior Surveillance System data indicate that, of the youth surveyed in Iowa in 2007, only 25% drank three or more glasses of milk per day during the past seven days. Furthermore, data collected by the National Dairy council in 2005 indicate that, among children age six to eleven, 71% of girls and 62% of boys do not meet their calcium requirements.

What has been done
A series of six nutrition lessons is provided to youth (Kindergarten through sixth grade) from low-income families by EFNEP and SNAP-Ed. The lessons are taught by trained paraprofessional staff during school enrichment, after school programs, and summer programs. These lessons focus on helping youth develop into healthy adults by empowering them to make good choices related to diet and physical activity. At each grade level, the milk food group is closely examined and children participate in hands-on activities related to making healthy choices from the milk group.

Results
Following participation in the six nutrition lessons, 53% of youth in grades 3rd through 6th indicated that they almost always eat foods from the milk group at least three times a day. This is a 9.9% increase in the number of students almost always consuming milk from beginning to end of the program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #2

1. Outcome Measures

Percent of youth participants reporting increased intake of fruit.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The 2010 Dietary Guidelines for Americans recommend that children consume about 1 1/2 cups of fruit each day (may be more or less depending on age, gender, and activity level). The Youth Risk Behavior Surveillance System data indicate that, of the youth surveyed in Iowa in 2007, only 20% reported eating five servings of fruits and vegetables each day. The Iowa Nutrition Network surveyed fifth grade students in 2010 and found that 60% of children reported they ate fruit two times each day. In both cases the serving sizes and variety of fruits and vegetables were not examined.

What has been done
A series of six nutrition lessons is provided to youth (Kindergarten through sixth grade) from low-income families by EFNEP and SNAP-Ed. The lessons are taught by trained paraprofessional staff during school enrichment, after school programs, and summer programs. These lessons focus on helping youth develop into healthy adults by empowering them to make good choices related to diet and physical activity. At each grade level, the fruit food group is closely examined and children participate in hands-on activities related to making healthy choices from the fruit group.

Results
Following participation in the six nutrition lessons, 48% of youth in grades 3rd through 6th indicated that they almost always eat different kinds of fruit every day. This is a 5.7% increase in the number of students almost always consuming a variety of fruit from beginning to end of the program.

4. Associated Knowledge Areas

KA Code	Knowledge Area

703 Nutrition Education and Behavior

Outcome #3

1. Outcome Measures

Percent of youth participants reporting increased intake of vegetables.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The 2010 Dietary Guidelines for Americans recommend that children consume about 2 cups of vegetables each day (may be more or less depending on age, gender, and activity level). The Youth Risk Behavior Surveillance System data indicate that, of the youth surveyed in Iowa in 2007, only 20% reported eating five servings of fruits and vegetables each day. The Iowa Nutrition Network surveyed fifth grade students in 2010 and found that 53% of children reported they ate vegetables two times each day. In both cases the serving sizes and variety of fruits and vegetables were not examined.

What has been done
A series of six nutrition lessons is provided to youth (Kindergarten through sixth grade) from low-income families by EFNEP and SNAP-Ed. The lessons are taught by trained paraprofessional staff during school enrichment, after school programs, and summer programs. These lessons focus on helping youth develop into healthy adults by empowering them to make good choices related to diet and physical activity. At each grade level, the vegetable food group is closely examined and children participate in hands-on activities related to making healthy choices from the vegetable group.

Results
Following participation in the six nutrition lessons, 37% of youth in grades 3rd through 6th indicated that they almost always eat different kinds of vegetables every day. This is a 7.8% increase in the number of students almost always consuming a variety of vegetables from beginning to end of the program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #4

1. Outcome Measures

Percent of youth participants reporting increased physical activity.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Dietary Guidelines for Americans 2010 recommend that children participate in 60 minutes of physical activity daily. The Youth Risk Behavior Surveillance System data indicate that, of the youth surveyed in Iowa in 2009, 57% of males and 50% of females reported they were physically active for a total of 60 minutes or more per day on five of the seven previous days. Among Iowa students in elementary schools surveyed by Iowans Fit for Life in 2009, approximately 55% of girls and 57% of boys were active for 60 minutes or more on five of the last seven days.

What has been done
A series of six nutrition lessons is provided to youth (Kindergarten through sixth grade) from low-income families by EFNEP and SNAP-Ed. The lessons are taught by trained paraprofessional staff during school enrichment, after school programs, and summer programs. These lessons focus on helping youth develop into healthy adults by empowering them to make good choices related to diet and physical activity. At each grade level, physical activity is discussed with almost every lesson and children participate in hands-on activities related to being physically active.

Results
Following participation in the six nutrition lessons, 80% of youth in grades 3rd through 6th indicated that they are almost always physically active every day. This is a 4% increase in the number of students who are almost always physically active from beginning to end of the program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #5

1. Outcome Measures

Percent of childcare training participants reporting preparedness to apply or teach health promoting dietary behaviors.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	77

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Childhood obesity has been declared the most pressing health concern in the country as rates doubled from 1980 to 2000. WIC data suggests overweight/obesity in Iowa will outpace the national average. In 1984, only 7.1% of children two years and older were overweight while in 2008, 32.1% of children between 2 and 5 years of age were overweight or obese, 14.6% were obese and 17.5% were overweight. Iowa WIC data show that over time, there has been a trend among low-income children to become overweight.

What has been done
Iowa has the highest percent of dual-income families with children under the age of 10 necessitating the use of childcare providers. Training for these childcare providers on issues relevant to the prevention of childhood obesity is critical. A series of four childcare provider trainings were developed and approved for Department of Human Services childcare licensure renewal and Child and Adult Care Food Program certification. These programs are being delivered statewide.

Results
Childcare trainings were attended by 1634 childcare providers over the past year. Over 75% of the childcare providers indicated preparedness to apply or teach health promoting dietary behaviors.

4. Associated Knowledge Areas

KA Code	Knowledge Area

703 Nutrition Education and Behavior

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Populations changes (immigration, new cultural groupings, etc.)
- Other (loss of staff due to budget cuts)

Brief Explanation

Economic constraints continue to influence program planning and participation rates. Citizens and organizations may wish to participate in programs but lack resources of time and transportation. Federal and state legislation continues to impact appropriations and policy for EFNEP, SNAP-ed, and school health programs/environments. A number of programs promoting increased physical activity continue to compete with Live Healthy Iowa and Live Healthy Iowa Kids (Shape Up America, Walk Across America, Alliance to a Healthier Generation, PE4Life, etc.). Increasing interest in indirect delivery methods continue for individuals and work organizations. Extension in this state continues to experience loss of staff further fueling the demand for more programming via technology. Finally, the diversity of the population in Iowa continues to change and challenges programming efforts that are sensitive to ethnic cultures.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

This state plan of work has identified and implemented priority programming. Priority programming criteria included timeliness, relevance, uniqueness (services not offered by other organizations), sequential, and impact. Sequential programming was prioritized based on the ability to demonstrate impact. To evaluate priority programs (i.e. childcare training), online surveys are capturing evaluation/impact data. Childcare training results suggest more than 75% of participants felt prepared to apply of teach health promoting dietary behaviors. Live Healthy Iowa continues to monitor self-reports of health behaviors including dietary intake and physical activity; 70% and 47% of participants reported desirable change in dietary intake and physical activity respectively. EFNEP continues to collect required pre/post data for federal reports.

Key Items of Evaluation

- Childcare training -- participant survey collected post-training and entered into online system for statewide analyses.
- Live Healthy Iowa -- participant survey collected pre, post and 6 months post program via online survey.
- EFNEP -- participant survey/interview collected pre and post program participation.

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Climate Change

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%		0%	
104	Protect Soil from Harmful Effects of Natural Elements	20%		0%	
132	Weather and Climate	10%		30%	
135	Aquatic and Terrestrial Wildlife	0%		11%	
202	Plant Genetic Resources	0%		43%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		12%	
205	Plant Management Systems	10%		0%	
303	Genetic Improvement of Animals	0%		4%	
405	Drainage and Irrigation Systems and Facilities	10%		0%	
601	Economics of Agricultural Production and Farm Management	10%		0%	
605	Natural Resource and Environmental Economics	10%		0%	
608	Community Resource Planning and Development	10%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Actual Paid Professional	4.2	0.0	4.1	0.0
Actual Volunteer	0.0	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**
126826	0	519324	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
126826	0	519324	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
14857	0	619713	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conducted and synthesized adaptation research, developed resources and strategies to increase climate literacy in target audiences, and trained decision-makers in new practices to ensure communities are prepared.

Faculty participate in the associated multistate research committees, NC7 and NC1179. They are working to enhance the understanding of crop-climate-soil interaction at a regional scale.

2. Brief description of the target audience

As programming in this sector continues to develop, audiences are identified and targeted. Targeted audiences are those with whom research and education can make a difference, and who benefit from and apply research-based information, such as those whose production systems are affected by climate change, as well as those who consult or influence decision-makers among producers. One particular audience is farmers and landowners who are returning flooded soils to production through adaptation of science-based reclamation strategies. Others include the research community, legislators and policymakers, state and federal agencies, agriculture producers, insurance companies, community and regional planners, and the general public.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1702	408	0	0

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

Patent Applications Submitted

Year: 2011
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	15	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of current year citations of climate related publications.
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of current year climate relevant educational programs.
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of acres under recommended adaptation strategies for production agriculture and natural resources management, including invasive species, pest management, pollutant loads, wetlands.
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Number of producers and landowners who adopt BMPs after severe flooding.
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of producers and agribusiness professionals, landowners who increase their knowledge of how to manage degraded soil resources that have been flooded over a substantial length of time to return it to production through implementation of science based strategies to protect food supply, prices and security.

Outcome #1

1. Outcome Measures

Number of producers and agribusiness professionals, landowners who increase their knowledge of how to manage degraded soil resources that have been flooded over a substantial length of time to return it to production through implementation of science based strategies to protect food supply, prices and security.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	275

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The 2011 Missouri River flood of 2011 greatly impacted farmers, agribusiness professionals, landowners and other citizens living or farming along the river. Clients in IA, NE, SD, MO and KS needed to remove debris and sediment, then apply new and unfamiliar practices to protect the environment and restore the productivity of the hundreds of thousands of acres impacted by the flood. Growers had never faced a flood of this magnitude and duration. Regional land grant university experts needed to partner with other agencies to develop and deliver information to anxious clients.

What has been done
Iowa State University experts held two flood webinars jointly with University of Nebraska staff. Over 500 clients (landowners, farmers, agribusiness, and service agency staff) attended. Four new publications were created to address recovery, and thousands of copies of these and existing publications were distributed to clients. This group of clients represented over 1 million acres of affected land.

Results
74% of clients who attended the meetings improved their knowledge and implementation of environmentally safe sediment and debris management. 55% of clients implemented environmentally and agronomically sound flooded soil syndrome management strategies. 55% of clients either planted or intend to plant cover crops to protect soil from erosion. Clients indicated the value of the information of the webinars was $18.1 million dollars.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems
405	Drainage and Irrigation Systems and Facilities
601	Economics of Agricultural Production and Farm Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

Severe and prolonged flooding along the Missouri River during the 2011 growing season resulted in substantially degraded soil resources that will take years to reclaim. Reclaiming these resources will require significant economic investments from affected producers.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

This program was not evaluated this year.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Helping Rural Iowans Prosper

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	4.5	0.0	5.0	0.0
Actual Paid Professional	0.0	0.0	0.0	0.0
Actual Volunteer	0.0	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
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

No longer reporting on this Program.

2. Brief description of the target audience

Extension field specialists are the appropriate local change agents to initiate a series of educational activities and events exploring the dependency of local economy on national and international events.

Target groups should be local leaders from the agricultural, business, industrial, education, religious, and health care sectors. In addition, elected officials from boards of supervisors, members of the Legislature, and others who have leadership role in community development should be included in planning education events that foster sustainable communities in a global economy.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of local leaders and citizens who attend face-to-face educational activities, including individual consultations.
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of local leaders and citizens who subscribe to newsletters and access web-based resources.

Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of community-based programs provided.
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Number of local leaders and citizens who attend programs related to preserving the rural landscape through agrotourism.
  Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of acreage owners who learn how to establish or manage small agricultural enterprises, rural water and waste disposal systems.
2	Number of Iowans who learn how to improve the rural/urban interface within their communities.
3	Number of local leaders who learn about the associated benefits and risks associated with regionalization and globalization.
4	Number of communities involved in planning activities that increase their economic and social productivity, diversity and resiliency.

Outcome #1

1. **Outcome Measures**

Number of acreage owners who learn how to establish or manage small agricultural enterprises, rural water and waste disposal systems.

Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

Number of Iowans who learn how to improve the rural/urban interface within their communities.

Not Reporting on this Outcome Measure

Outcome #3

1. **Outcome Measures**

Number of local leaders who learn about the associated benefits and risks associated with regionalization and globalization.

Not Reporting on this Outcome Measure

Outcome #4

1. **Outcome Measures**

Number of communities involved in planning activities that increase their economic and social productivity, diversity and resiliency.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (Technological change)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

This program was not evaluated this year.

Key Items of Evaluation