

2012 Iowa State University Combined Research and Extension Plan of Work

Status: Accepted

Date Accepted: 06/27/2011

I. Plan Overview

1. Brief Summary about Plan Of Work

Agriculture in the state of Iowa has grown from traditional production of crops and livestock to encompass the revolution in 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 agricultural, food, value-added, environmental, and community endeavors.

Iowa's abundance is astonishing. The state consistently is the nation's first- or second-largest producer of corn, soybeans, pork and eggs. Iowa is the fifth largest producer of cattle and in the top dozen for dairy production. Nearly 90 percent of Iowa's total land area is farmland. The power of that abundance stretches beyond Iowa's farms. It provides deep roots for a larger agri-food industry. In 2007, 11.1 percent of Iowa's gross state product came directly from the farm, food-processing, and farm chemical, ethanol, and machine manufacturing sectors; this grows to 17.7 percent if you include the value added from Iowa-produced inputs that went into each of these industries.

While the population of Iowa has been stable over the past years, the population is shifting from rural communities to urban and suburban communities. The shift has resulted in needs and opportunities related to communities, families and youth. Likewise, Iowa's 956 cities and 99 counties continue to struggle with identifying and seizing economic and social opportunities and improving quality of life for their residents. Continuing demographic change and globalization create ongoing opportunities and challenges toward achieving socially beneficial, economically successful, and environmentally sound systems for food, feed, fiber, fuel, and other value-added products.

Effective management of natural resources, including water, land, and air, is required for sound environmental stewardship, enhancing communities and people, and creating economic vitality given the demands for the production and manufacturing associated with agricultural, food and horticultural systems.

Agriculture will continue to be a perennial base of economic, social, and cultural pride for the state. The reason is because Iowa agriculture is more than just a world-renowned mixture of soil and climate. It also is dedicated citizens, producers, scientists, educators, business people, and community and organizational leaders who believe in the future of Iowa. Iowa's current and future competitive advantage lies with the value-added areas of agricultural, food, horticultural, and natural resource-based products.

The Iowa Agriculture and Home Economic Experiment Station and Cooperative Extension Service work together to plan, discover, and deliver science-based knowledge for the benefit of the citizens and stakeholders of Iowa.

The national recession resulted in significant cuts to state appropriations to ISU, which further resulted in a large reorganization of Extension. This has impacted all extension programs to varying degrees. The experiment station has suffered similar reductions in state funding and is in the midst of developing a strategic plan for focusing resources on and streamlining priority programs. Thus while our Plan of Work continues to represent an explicit statement on the planning, discovery, and delivery process, our capacity to do each has been hampered by the loss of operating funds, faculty and staff.

The Iowa State University (ISU) Combined Extension and Research Plan of Work for 2012-2016 is organized under ten broad program areas:

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

This five-year, rolling Plan of Work represents a coordinated plan for the more than 300 scientists associated with the Iowa Agriculture and Home Economics Experiment Station (hereafter the Experiment Station) and the more than 150 extension specialists and educators with the ISU Cooperative Extension Service.

The Plan of Work reflects an integration of ISU extension and research programs, particularly in the animal systems and natural resources themes. The programs show the uniqueness associated with both extension and research activities in terms of resources, existing organization structure, and faculty tenure. They also reflect the results of dialogues held among research and extension personnel. The result is a Plan of Work based on both research and extension goals and activities, rather than a single orientation toward one or the other area.

The Experiment Station's work represents the efforts of scientists in more than 35 departments, centers, and programs across the Iowa State University campus. Although the work primarily focuses on areas in the College of Agriculture, the Experiment Station also supports research in the College of Engineering, the College of Human Sciences, the College of Liberal Arts and Sciences, and the College of Veterinary Medicine. The Experiment Station cooperates with other states' agricultural experiment stations to ensure attention to critical problems, to share research results, and to avoid unnecessary duplication.

Likewise, as Iowa State's primary conduit for transferring the fruit of science and technology to Iowans, ISU Cooperative Extension Service is meeting critical needs through the teamwork of campus faculty, a statewide corps of local Extension leaders and specialists, and thousands of trained volunteers. ISU Extension cooperates with similar units across the nation, but with particular focus on the North Central Region in terms of coordination of programs, activities, and metrics to measure impact. Extension staff are engaged on a daily basis with Iowans, receiving direct feedback from citizens, businesses, and communities that shape ISU research and help ISU develop innovative programs and efficient delivery mechanisms to meet the needs of an increasingly knowledge-based economy.

As demonstrated by this Plan of Work, Iowa State University is committed to creating, sharing, and applying knowledge to make Iowa, and the world, a better place. With its broad portfolio of science-based knowledge and its commitment to partnerships both internally and with external stakeholders, Iowa State's research and extension programs are providing the science and education to address new challenges and opportunities.

We recognize the added value that multistate research and extension projects bring to addressing important food, feed, fiber, fuel, family, and community issues, and thus for many of our programs, there will be Iowa State University personnel (research and extension specialists) engaged in one or more

multistate research and extension projects.

Estimated Number of Professional FTEs/SYs total in the State.

Year	Extension		Research	
	1862	1890	1862	1890
2012	380.0	0.0	175.0	0.0
2013	380.0	0.0	175.0	0.0
2014	380.0	0.0	175.0	0.0
2015	380.0	0.0	175.0	0.0
2016	380.0	0.0	175.0	0.0

II. Merit Review Process

1. The Merit Review Process that will be Employed during the 5-Year POW Cycle

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

2. Brief Explanation

Merit Review:

- Iowa's rapidly changing political, social, and economic environment demands a dynamic program development process that incorporates the following:
 - self directed work teams,
 - continuous needs assessment,
 - public and private partnerships,
 - an increased focus on outcomes,
 - aggressive funding mechanisms to grow new programs.

Needs Assessment:

ISU Extension will continue to follow this three-point approach:

- *Engagement of key statewide constituencies.* Program Directors develop a plan to identify needs working with statewide constituencies. State level governmental agencies and non-governmental organizations will be involved.
- *Engagement of the general population.* Surveys will be used to obtain input from a broad-base of Iowans.

- *Engagement of local stakeholders.* County Extension Councils and local stakeholder groups will participate in formal activities to confirm, prioritize, or regionalize the needs assessment.

State POW merit review:

North Central Regional Program Directors will review plans across the region and will continue to provide oversight, guidance, and course corrections on the logic models.

Scientific Peer Review:

Project Proposals: Each project proposal will be endorsed by the department chair and Associate Director of the Experiment Station. The Assoc. Director will send the proposal to peers internal to ISU (typically 3 to 4 faculty) for a thorough review of the scientific merit, linkage with the POW, and the strategic plan of the college. Depending upon the reviews, the project is either approved, modified somewhat to significantly based on review comments, or rejected. Project proposals may be submitted by individuals, small groups, or a large group but must align with one or more programs under the POW.

Program Review Teams: Ad Hoc teams will be asked to periodically review all programs under the broad themes. The teams will be asked if the research activities, outputs and outcomes are in alignment with the POW and if there are emerging research programs that the Experiment Station should be incorporating into the POW within the five-year period.

III. Evaluation of Multis & Joint Activities

1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?

The planned programs were based on input from stakeholder groups and scientists who identified the most critical issues. In many cases, stakeholders are involved in the implementation of applied research efforts and educational/demonstration programs. In other situations, stakeholders through their commodity groups, provide additional funding to address issues of strategic importance.

2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?

In addition to people of color, our programs have been expanded to include members of other traditionally underrepresented audiences; physically challenged; mentally challenged; men in family service/care programs; women in agriculture, individuals and families in poverty, older lowans and families of incarcerated adults.

Individuals from traditionally underserved and/or underrepresented groups were included in the initial identification process and in the program allocation process by a variety of means. The 2010 Extension state wide needs assessment survey specifically over sampled under served groups to assure representation. All programs include activities that support efforts in underserved and under represented populations.

3. How will the planned programs describe the expected outcomes and impacts?

Some program areas are focused on extension activities and thus the expected outcomes are long-term. Some programs are focused on research activities and thus the

outcomes are more short-term with the expectation that transference of the scientific knowledge will occur through extension programming. Goals for both outputs and impacts have been identified and will be closely monitored for correction.

4. How will the planned programs result in improved program effectiveness and/or

Our POW and the process used to develop it and adjust it via merit and scientific reviews allows for closer coordination between researchers and extension. The program area teams have a better understanding of what citizens of the state believe to be the key issues. We continue to work on program effectiveness and efficiency. We are also constantly monitoring the outcomes in regard to inputs and outputs, as well as growing evidence based efforts, when possible.

IV. Stakeholder Input

1. Actions taken to seek stakeholder input that encourages 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.

Building on the strong tradition of stakeholder engagement with the experiment station and cooperative extension, we continually interact with traditional and nontraditional stakeholder groups through normal activities as well as inviting the public's participation in specific surveys. No extraordinary efforts are necessary to engage various groups.

Extension has increased access to needs of minority and under-represented groups by hiring staff that are bilingual and representative of the target population, also continually seeking to have broader, more representation on advisory teams.

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

1. Method to identify individuals and groups

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

Brief explanation.

The experiment station will use the existing dean's advisory groups, consisting of key leaders from stakeholder groups. Using a variety of statistical methods, focus group and survey participants will be identified.

Extension uses a state wide advisory team that is representative of population and stakeholder groups. At the county level, elected county Extension council officials review needs and plans on an annual basis, involving citizens using a variety of formal and informal processes to assure broad representation.

2(B). A brief statement of the process that will be 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

Brief explanation.

- Meetings with traditional stakeholder groups and individuals are by far the most common method used.
- Activities specifically for non-traditional groups and individuals.

- Open listening sessions and conferences.
- Targeted and random surveys.
- Contacts are ongoing by field agronomists, county extension education directors, and state specialists who work with individual private sector partners.
- Meetings with professional associations and advisory boards, and other various groups across the state.
- Selected 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.
- Webcasts serve to share information and new policy direction and receive input from stakeholders. Participants are often surveyed.
- Participants are asked to complete a survey at the beginning and end of the training to assess their training needs and how the training series can be improved, as well as a self-assessment to identify specific knowledge and skills participants gained from the training. Follow-up surveys sometimes occur, and website contacts for information are provided.
- ISUE state and field specialists serve on multiple county and state advisory committees.
- Personal contacts initiated by the stakeholders.
- One-on-one interaction, surveys from clients at public meetings, discussions with Advisory Board members, e-mail communications including responses to Web and other origination sources.
- Surveys allowed those unable to attend meetings to voice opinions about needs and program planning processes. Follow-up meetings with selected individuals who might provide 'missing voices' are conducted in order to gather broad-based input.
- Each community determined how they would collect input, and choose 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.

The input provides an opportunity to reassess specific objectives and the research projects under each program, and to redirect as appropriate. Feedback will be used to confirm or reject the expected values associated with outcomes and impacts of the programs. The process of engaging stakeholders allows us to deliver very targeted information in response to their stated needs.

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Youth Development
2	Families: Expanding Human Potential
3	Community and Economic Development
4	Global Food Security and Hunger
5	Global Food Security and Hunger - Regional Foods Systems
6	Natural Resources and Environmental Stewardship
7	Sustainable Energy - Biofuels and Biobased Products
8	Food Safety
9	Childhood Obesity - Prevention
10	Climate Change

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Youth Development

2. Brief summary about Planned Program

4-H empowers youth to reach their full potential working and learning in partnership with caring adults. Positive youth development helps young people become competent, caring, contributing, confident, connected and capable through a series of progressive learning experiences with caring adults. These experiences involve meeting the four needs of youth (Bentro et al, 1992), fostering the eight essential elements (National 4-H Headquarters, 2001) and achieving the five life skill outcomes of leadership, citizenship, communications, personal life management, and knowledge. Staff will work with youth, volunteers, and professionals to plan, implement and evaluate a progressive series of education programs and experiences that work toward multiple life skill outcomes that reach youth over an extended period of time. Staff will model youth-adult partnerships in the 4-H program. Staff will work with state and community organizations and leaders to assist them in creating positive youth development environments that will engage youth in decision-making roles.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds :Yes

6. Expending other than formula funds or state-matching funds : Yes

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%		100%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Without strong positive youth development programs with caring adults families, youth, and communities face a host of social problems. Research shows that positive youth development helps young people become competent, caring, contributing, confident, connected and capable through a series of progressive learning experiences with caring adults.

2. Scope of the Program

- In-State Extension

- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Training staff and volunteers on positive youth development principles and practices will lead to high quality environments for youth to develop into competent, confident, connected, contributing, and caring citizens with character. Funding will likely decrease from federal, state, local, and university sources.

2. Ultimate goal(s) of this Program

Increase the number of youth reached through positive youth development learning opportunities that help young people become competent, confident, connected, contributing, and caring citizens with character via a series of progressive learning experiences in partnership with caring adults.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2012	47.0	0.0	0.0	0.0
2013	48.0	0.0	0.0	0.0
2014	48.0	0.0	0.0	0.0
2015	48.0	0.0	0.0	0.0
2016	48.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Increase the number of 4-H members in 4-H clubs across the state.
- Strengthen statewide volunteer management infrastructure.
- Organize staffing structure based on curricular teams/issues programming.
- Design learning experiences and conduct training for and with staff, volunteers, and community and state partners that contribute to the life skill outcomes of leadership, citizenship, communications, personal life management and knowledge in environments that meet the needs of youth in long-term settings (clubs, afterschool, and other out-of-school time).
 - Build state and community level capacity to ensure policies and opportunities are based on the principles and practices of positive youth development.

- Train volunteers working with committees and boards on developing County 4-H Youth Committees.
- Collect data on the current status of statewide volunteer training delivery and youth enrollment in 4-H clubs.
 - Train staff and community groups on best practices of youth in governance, afterschool programs, youth/adult partnerships, volunteer development, sustainable energy, climate change, childhood obesity, and food safety.
 - Train staff and volunteers on how to create positive youth development environments in club, afterschool, camp, and other out-of-school time settings.
 - Communicate positive youth development principles and practices by launching a new Iowa 4-H Youth Development website.
 - Launch online volunteer development training system for 4-H volunteers.
 - Assess county enrollment trends and identify barriers that limit enrollment, retention, and participation of youth in club programs.
 - Implement multi-faceted marketing infrastructure to communicate positive youth development principles, practices, and programming successes via news releases, brochures, on-line training, radio segments, webinars, etc. with volunteers, staff, and community partners.
 - Partner with state and national entities to collect and report afterschool impact data.
 - Conduct 4-H Afterschool programming in counties with children and youth.
 - Work with other states' 4-H Youth Development staff to evaluate/research positive impact of 4-H participation in the lives of young people.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> • Education Class • Workshop • Group Discussion • Demonstrations • Other 1 (Conferences) • Other 2 (Club Activities) 	<ul style="list-style-type: none"> • Newsletters • Web sites other than eXtension • Other 1 (Webinars, Radio, Brochures, Podcast) • Other 2 (Teleconferences, On-Line Training)

3. Description of targeted audience

- K-12 youth
- Adult and youth volunteers
- Federal, state, and community level collaborations, organizations, and agencies
- Extension educators
- K-12 teachers
- Pre-service educators

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of youth who retain membership in 4-H clubs after 1 year of membership.
- Number of volunteers completing one training/yr.
- Number of youth who participate in 4-H Afterschool.
- Number of local partnerships initiated or strengthened.
- Number of new clubs developed using innovative and emerging 4-H club models.
- Number of 4-H livestock exhibitors certified in Food Safety and Quality Assurance (FSQA).
- Number of 4-H'ers enrolled in Foods, Nutrition, Physical Health, Fitness, and Sports project areas.
- Number of pre-service teachers and educators trained in Connecting Learning & Living Curricula on connecting youth with MyPyramid concepts and understanding the origins of food.
- Number of youth reached by educators trained in Connecting Learning & Living Curricula (agriculture, environmental, food, and nutrition emphasis).
- Number of youth and adults trained using climate curricula.
- Number of youth and adults trained using sustainable energy curricula.

- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Percentage of pre-service teachers and educators who participate in CLL training will self-report a 1 to 3-point increase in confidence/knowledge in teaching MyPyramid concepts and the origins of food.
2	As reported by educators, percentage of youth participating in CLL lessons who increased their knowledge of the MyPyramid and making healthy food choices.
3	As reported by educators, percentage of youth participating in CLL lessons who made healthy food choices; tried new foods; and made healthier food choices during snacks, lunch, and class parties.
4	As reported by educators, percentage of youth participating in CLL lessons who increased their knowledge regarding growing food from plants.
5	As reported by educators, percentage of youth gardeners participating in CLL lessons who improve their vegetable consumption.
6	Percentage of 4-Hers ages 12-18 taking the FSQA certification test who self-report improved techniques and practices in livestock drug injections, record keeping, and food product safety and biosecurity.
7	Percentage of youth participating in sustainable energy workshops who self-report increased knowledge of what sustainable energy means, the importance of sustainable energy, and/or promising sustainable energy technologies.
8	Percentage of youth participating in climate change workshops who self-report increased knowledge of the causes and/or consequences of climate change.

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

2012:60 2013:60 2014:60 2015:60 2016:60

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:80 2013:80 2014:80 2015:80 2016:80

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:25 2013:26 2014:27 2015:28 2016:29

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

As reported by educators, percentage of youth participating in CLL lessons who increased their knowledge regarding growing food from plants.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:90 2013:90 2014:90 2015:90 2016:90

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

As reported by educators, percentage of youth gardeners participating in CLL lessons who improve their vegetable consumption.

2. Outcome Type : Change in Action Outcome Measure

2012:90 2013:90 2014:90 2015:90 2016:90

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 6

1. Outcome Target

Percentage of 4-Hers ages 12-18 taking the FSQA certification test who self-report improved techniques and practices in livestock drug injections, record keeping, and food product safety and biosecurity.

2. Outcome Type : Change in Action Outcome Measure

2012:90 2013:90 2014:90 2015:90 2016:90

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 7

1. Outcome Target

Percentage of youth participating in sustainable energy workshops who self-report increased knowledge of what sustainable energy means, the importance of sustainable energy, and/or promising sustainable energy technologies.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:82 2013:83 2014:84 2015:85 2016:86

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 8

1. Outcome Target

Percentage of youth participating in climate change workshops who self-report increased knowledge of the causes and/or consequences of climate change.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:82 2013:83 2014:84 2015:85 2016:86

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

1. Availability of funding at the national, state, and local county levels for Extension outreach.
2. Changes in national and/or state Extension programmatic priorities.
3. Extent of breadth of collaborative partnership development with local, state, and national agencies, organizations, and institutions.
4. Ongoing Iowa State University Extension reorganization including the merger of the Families and 4-H Extension units.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

- Iowa 4-H Campus Census Survey: Anticipated Outcomes
 - Demonstrate breadth of 4-H influence on ISU campus
 - Obtain contact information for campus-based 4-H alumni
 - Increase the 4-H Program's campus-based volunteer pool
 - Broaden 4-H partnerships in areas such as marketing, research, and subject area expertise
- (Multi-state) 4-H Study of Positive Youth Development: Anticipated Outcomes

- Assist North Central Region (NCR) 4 H programs to plan, deliver, and evaluate a protocol for recruiting a stratified sample of youth
- Demonstrate congruity between NCR and national data regarding the presence of the 5 C's of positive youth development in the lives of 4-Hers
- (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 as they plan, deliver, and evaluate programs
 - Findings demonstrate the 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 the development of social capital

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Families: Expanding Human Potential

2. Brief summary about Planned Program

Iowa cares deeply about its families and their mental, physical, social and economic well-being. Iowans recognize the value of high quality, affordable early childhood care and education, the need for effective parenting, the importance of exercise, nutrition, assured access to healthy safe food for all Iowans on a regular basis, and the ability to manage and plan for personal and family finances. Iowa is changing -- significant increase in older adults and racial and ethnic diversity. Iowans support working collaboratively at the community level to impact public issues such as obesity, poverty, food insecurity, immigration, and youth success academically, socially and emotionally.

ISUE educational programs delivered in a variety of ways will help Iowans improve knowledge and change behavior to reduce negative health consequences brought about by unhealthy lifestyles (e.g., extreme stress, overweight, obesity, physical inactivity), inadequate and unsafe food handling practices. Families across socioeconomic status and race/ethnicity will increase knowledge and develop skills to improve decision making related to caring for children and other family members, parenting effectively, adopting healthy behaviors and lifestyle choices, and managing and maximizing financial resources.

Extension education will increase community awareness about critical issues facing families, and involve community members in processes that address critical needs.

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. BRFSS data suggest less than 20% of adult Iowans consume the recommended servings of fruits and vegetables and only 52% are performing regular exercise meeting national recommendations. Nutrition and health programs will be offered in every major community and most counties in Iowa. Programs will focus on improving nutrition education and behavior to reduce negative health consequences brought about by overweight, obesity and inactivity. Programs will be 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. Expanded Food and Nutrition Education and Food Stamp Nutrition Education Programs deliver basic nutrition information utilizing paraprofessional educators to qualifying low-income Iowans. The Iowa EFNEP and FNP program are administered through Extension to Families and 4-H Youth Development, with partnership and support of Extension faculty. Audiences will learn about the myriad of factors in the current socioeconomic environment contributing to overweight and obesity including genetics, the feeding relationship, lack of physical activity, technology, portion distortion, and food availability. The LIFE Program is piloting a community-based, intergenerational exergaming program for older adults in rural senior centers. Professional development for food and nutrition professionals is delivered via Current Issues in Nutrition webinar which reaches domestic and international participants.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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	15%		15%	
704	Nutrition and Hunger in the Population	5%		5%	
801	Individual and Family Resource Management	20%		20%	
802	Human Development and Family Well-Being	50%		50%	
805	Community Institutions, Health, and Social Services	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

One third of Iowa births are to unmarried women and 26% Iowa children live in single parent families. 88 of Iowa's 99 counties in 2030 will have more than 20% of their population age 65 and older. Iowa has experienced reduced academic achievement, and increases in food insecurity, poverty, family stress, and use of public assistance. Iowa is ranked 3rd in the nation for the number of families with children under age 6yrs that have all parents in work force. 82% of Iowa's childcare programs are unregulated.

93% of teens and young adults go online, 56% of youth report being bullied at school, and 45% of Iowa youth report living in a supportive neighborhood. 26% of Iowa teens are overweight or obese; 49% do not exercise regularly. Billions of dollars spent annually to address the societal costs of child abuse. One third of the population provides caregiving for older family members.

The number of working poor is increasing and the rural urban gap is growing. Rural communities face growing challenges in retaining well-paying job opportunities and the array of services needed and desired by families across the lifespan. Low savings rates, high debt levels, and a lack of planning for potential major life events leave Iowans financially vulnerable. Low-income consumers are at greatest risk of economic instability 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 is also affecting communities. 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.

The Centers for Disease Control and Prevention recommend efforts to prevent and control obesity target the following areas based on the best available evidence: (Dietz, 2008; CDC, 2009):

- Increase physical activity
- Decrease television viewing
- Increase the consumption of fruits and vegetables
- Decrease the consumption of sugar-sweetened beverages
- Reduce the consumption of high energy-dense foods (high calorie foods)
- Increase breastfeeding initiation, duration, and exclusivity

Obesity among adult lowans has more than doubled between 1980 and 2002 regardless of gender, age and ethnicity. Among lowans in 2009, 67.2% of all adult lowans are either overweight or obese, 38.7% were overweight and 28.5% were obese. This represents a 36% increase between 1979 and 2009, compared to the national increase of 32%.

Undesirable dietary and physical activity behaviors are contributing to the obesity epidemic. Americans are consuming an average of 2,700 calories daily, about 500 calories more than 40 years ago. BRFSS data (2009) suggest less than 20% of adult lowans consume the recommended servings of fruits and vegetables on a daily basis. Substantial evidence links overweight and obesity with the consumption of sugar-sweetened soda or fruit drinks, which account for an estimated 8-9% of the energy intake among adults. Adult lowans drink an average of 4.3 glasses of sugar sweetened beverages weekly.

Less than half of all adult lowans 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 lowans 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 (i.e., 5.8%) engaged in such activities never or less than daily, while 0.8 percent responded twelve or more hours each day. Adults watching more than 2 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.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

- Citizens can learn skills to make effective decisions, individually and collectively.
- Evidenced-based education and training can help people make wise choices.
- Communities can use an empowering approach to manage critical issues facing them.
- Diversity enhances our culture and supports economic vitality.

- Public policy can enhance community vitality.
- Continued resources and funding can be secured to support these nutrition programs.
- National focus on overweight/obesity and greater public awareness will continue to mobilize communities to adopt behaviors that combat overweight/obesity.
- Education improves individual, family, community and environmental health.
- Research/evidence-based information produces expected outcomes.
- Federal and state legislation and policy will continue to support health promoting environments.

2. Ultimate goal(s) of this Program

Individuals, families, and community institutions work collaboratively to improve quality of life through family development and slow or stop increasing rates of adult overweight and obesity through nutrition education, promotion of physical activity opportunities and community advocacy for health promoting nutrition, physical activity and food availability.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2012	35.0	0.0	6.6	0.0
2013	35.0	0.0	6.6	0.0
2014	35.0	0.0	6.6	0.0
2015	35.0	0.0	6.6	0.0
2016	35.0	0.0	6.6	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Short term and in-depth sequential educational programs will be directed toward individuals, families, professionals and community leaders through one-on-one education, workshops, meetings, conferences, online learning, and social and mass media to strengthen their knowledge and skills. We will develop products, curriculum, and other educational resources for use in training, technical assistance, and facilitation of community advocacy.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> • Education Class • Workshop • Group Discussion • One-on-One Intervention 	<ul style="list-style-type: none"> • Public Service Announcement • Newsletters • Web sites other than eXtension • Other 1 (Blogs)

3. Description of targeted audience

Parents of children, teens, and young adults, families with lower incomes, child and family caregivers, family serving professionals, health professionals, worksite employees, food service managers, food processors, policy makers, businesses, community members and leaders, adults, older adults, education professionals, and employers.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of parents and family members in educational programs related to child care, parenting, and aging.
- Number of professionals in educational programs related to child care, parenting, and aging.
- Number of adults participating in educational programs that increase awareness of public issues.
- Number of community groups formed to address a public issue.
- Number of adults participating in educational programming related to nutrition, physical activity and health promotion.
- Number of youth participating in educational programming related to nutrition, physical activity and health promotion.
- Number of professionals participating in educational programming related to nutrition, physical activity and health promotion.
- Number of participants in financial resource management programs.

- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of parents improving parenting skills.
2	Number of family serving professionals trained.
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 communities who report taking action to address public issues related to improving circumstances for children, youth and families at risk.
6	Percent of worksite wellness program participants progressing towards action/maintenance according to the "Stages of Change" relative to fruit and vegetable intake.
7	Percent of worksite wellness program participants progressing towards action/maintenance according to the "Stages of Change" relative to physical activity.
8	Percent of adult EFNEP/FNP graduates increasing minutes of physical activity.
9	Percent of adult EFNEP/FNP graduates who made a positive change in one or more nutrition practices.
10	Percent of adult EFNEP/FNP graduates who made a positive change in food resource management skills such as not running out of food.
11	Number of individuals increasing savings and reducing debt.
12	Number of individuals increasing credit as an asset.
13	Number of individuals setting and making progress toward financial goals.

Outcome # 1

1. Outcome Target

Number of parents improving parenting skills.

2. Outcome Type : Change in Action Outcome Measure

2012:3500

2013:3500

2014:3500

2015:3500

2016:3500

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Number of family serving professionals trained.

2. Outcome Type : Change in Action Outcome Measure

2012:600

2013:600

2014:600

2015:600

2016:600

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:1500 2013:1500 2014:1500 2015:1500 2016:1500

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

Number of participants better able to manage later life issues.

2. Outcome Type : Change in Action Outcome Measure

2012:300 2013:350 2014:400 2015:400 2016:500

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:8 2013:8 2014:8 2015:8 2016:8

3. Associated Knowledge Area(s)

- 805 - Community Institutions, Health, and Social Services

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:30	2013:30	2014:30	2015:30	2016:30
----------------	----------------	----------------	----------------	----------------

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 7

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:30	2013:30	2014:30	2015:30	2016:30
----------------	----------------	----------------	----------------	----------------

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 8

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:45 2013:45 2014:45 2015:45 2016:45

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 9

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:92 2013:92 2014:92 2015:92 2016:92

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 10

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:89 2013:89 2014:89 2015:89 2016:89

3. Associated Knowledge Area(s)

- 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 11

1. Outcome Target

Number of individuals increasing savings and reducing debt.

2. Outcome Type : Change in Action Outcome Measure

2012:1000 2013:1000 2014:1000 2015:1000 2016:1000

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 12

1. Outcome Target

Number of individuals increasing credit as an asset.

2. Outcome Type : Change in Action Outcome Measure

2012:1000 2013:1000 2014:1000 2015:1000 2016:1000

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 13

1. Outcome Target

Number of individuals setting and making progress toward financial goals.

2. Outcome Type : Change in Action Outcome Measure

2012:2000

2013:2000

2014:2000

2015:2000

2016:2000

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect 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 faculty and staff)

Description

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 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 work organizations. Several of the 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(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

For family life programs participant attitudes, knowledge and behaviors will be assessed. Strengthening Families Program for Parents and Youth 10-14 years will conduct retrospective post then

pre tests with parents and youth. Post training observational assessment for Early Childhood Environment rating scale training to measure impact of quality improvements will be conducted. A post training survey of participants in Powerful Tools for Caregiver training program will take place. Case studies of Horizons and CYFAR communities will be documented.

In addition, 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. For nutrition education and wellness programs, participants of the worksite wellness program *Stage of Change* will report fruit/vegetable intake and physical activity. The LIFE Program evaluation research project is piloting a community-based, intergenerational exergaming program for older adults in seven rural senior centers. Quantitative and qualitative measures will assess program benefit/impact specifically functional limitations, functional fitness (Senior Fitness Test), readiness to change for physical activity, and quality of life. EFNEP continues to collect required pre/post data for federal reports.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Community and Economic Development

2. Brief summary about Planned Program

Community visioning and design -- We will pursue a program of participatory research and outreach, working with communities to develop concepts and strategies for creating a shared vision of the future; which includes social, as well as physical/design strategies. Programs such as Iowa's Living Roadways Community Visioning, the Community Design Program, PLaCE, Downtown & Neighborhood Revitalization will continue to involve participatory research and outreach.

Community planning -- We will conduct research and provide outreach to communities on community planning, zoning, geographic information systems and community resource management. We will provide training to local officials on local government topics that contribute to the efficient management and operation of community assets.

Community economic development -- We will conduct economic analyses and applied research for communities and regions, disseminate the information, and provide training on entrepreneurship and small business development and management.

We will pursue a program of participatory research and outreach, working with community and not-for-profit organizations to train individuals to assume leadership roles in these organizations.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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 (Situation and Scope)

1. Situation and priorities

SITUATION

Many small Iowa communities lack resources and expertise to develop comprehensive plans and individual community improvement projects. Issues facing communities include the growing bioeconomy, Iowa's aging population, changing demographics (immigration), wellness issues such as adult and childhood obesity, and the need for new economic development strategies. Many smaller communities in Iowa face enhancement related issues that they are unable to address due to lack of planning personnel and/or resources. Severe storm and flood damage, a problem that has been increasing in recent years, exacerbates this issue. Problems during the election process continue to occur throughout the country as more and more precincts develop new procedures and adopt new technology. Life in Iowa's small communities is also affected by global issues, such as climate change, the price of fossil fuels, and instability in the global economy.

There is a need for better community programming. Community programming is often not intuitively related to what is seen as Agricultural Extension.

PRIORITIES

The Bioeconomy

Helping communities to adjust and benefit from the changing bioeconomy -- the development of the biofuels industry, wind-generated energy, and other sustainable energy sources.

Iowa's Aging Population

Helping communities to create elder-friendly communities to better accommodate their aging citizens and to create new economic development opportunities to keep retirees in the state and attracting people to retire in Iowa.

Demographic Shifts Caused by Immigration

Communities need assistance in integrating new immigrants into the community and engaging immigrants so that they become an asset to the community in terms of social and economic development.

Wellness Issues

Working with communities to diffuse the obesity epidemic in the state with strategies for improved

walkability (trails, complete streets), safe routes to school, and education on diet and nutrition.

Housing/Poverty

Helping families make the transition to home ownership and to help low-income families improve their living conditions, the Iowa General Assembly created a state housing trust fund administered by the Iowa Finance Authority that offers forgivable loans to rehabilitate existing housing. However, many Iowa communities do not have the structure in place to apply for and administer such loans. Many rural communities in Iowa also struggle to reduce poverty.

Leadership Development

Keeping local officials, municipal professionals, county officials, planners and other community leaders informed to deal effectively with the election process, long-term planning, disaster recovery, economic development strategies and other issues through leadership training workshops.

Planning/Community Economic Development

Assisting communities with economic development strategies in economically distressed areas, such as Southwest Iowa through communication networks such as Rural Development Resource Center, WE-LEAD, Latino business networks, and other resources.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Iowa's aging population is not only an issue, but an opportunity for Iowa communities in terms of economic development. Work in other states throughout the country indicates that creating elder-friendly communities is a viable economic development strategy that will attract and retain residents. Studies have shown that attracting one older citizen to a community is comparable to creating at least one if not more new manufacturing jobs.

To help families make the transition to home ownership and to help low-income families improve their living conditions, the Iowa General Assembly created a state housing trust fund administered by the Iowa Finance Authority that offers forgivable loans to rehabilitate existing housing. However, many Iowa communities do not have the structure in place to apply for and administer such loans. Many rural communities in Iowa also struggle to reduce poverty.

Many communities in Iowa lack the resources necessary to develop innovative projects and initiatives designed to improve their economic growth. Communities need assistance in dealing with issues related to

community entrepreneurship, community philanthropy and rural/urban policy. Southwest Iowa is considered one of Iowa's economically distressed regions and is in need of assistance in economic development. The region's shares of the state income, jobs, and people are on a downward trend. The workforce is older; many younger workers have relocated.

County and state election officials are committed to ensuring that Iowa elections continue to reflect "good government" values of Iowans. Iowa municipal employees must also deal with constantly changing legislation and procedures. Evidence supporting this assumption is the popularity of the Precinct Election Officials (PEO) certification training and the Iowa Municipal Professionals Institute offered by ISU Extension Office of State and Local Government Programs. More than 4,200 election officials were certified from 2006 through 2008. Training evaluations show that 95% of participants rated the program as very good or excellent. Roughly 250 municipal professionals participate in the Municipal Professionals Institute every year.

Community planning and design assistance is more effective when participatory processes are employed. Impact assessments of the Community Visioning Program have shown that 94 percent of communities that participate in community visioning complete at least one project proposed during the process. The demand is high for assistance from College of Design studio classes and the PLaCE program. Extension and the College of Design established two satellite facilities that are bringing outreach services directly to the public. Studios at ISU Design West in Sioux City have resulted in new bus stops in Sioux City and cabins for a South Sioux City park. Town/Craft in Perry has hosted community conversations between the Anglo and Latino populations in the community, as well as roundtable meetings that address issues facing rural communities such as the bioeconomy, housing, and aging.

2. Ultimate goal(s) of this Program

To close the gap that exists between demand for planning services to rural Iowa communities and the availability of those services by continuing to offer community planning assistance through College of Design studios, the PLaCE program, GIS imaging workshops, and planning and zoning workshops for city officials and planners. The Community Visioning Program will continue to assist small Iowa communities to develop enhancement plans that reflect the values and identity of the community, as well as to offer focused long-term planning assistance to communities affected by natural disasters.

To effectively address Iowa's changing demographics:

- Continue to revise and expand the Spanish-language DVD series, *Éxito en el Norte*, designed to help immigrants adjust to life in Iowa and the United States. Continue to provide educational programs for the immigrant population, including U.S. citizenship courses, training for immigrant entrepreneurs. Assist communities in integrating new immigrant populations.
- Assist Iowa communities in making their communities "elder friendly" to adapt to Iowa's aging population. Assist communities in capitalizing on elder friendly community development as a economic development strategy To help families make the transition to home ownership and to help low-income families improve their living conditions through assistance in developing Local Housing Trust Funds and ultimately to develop a statewide housing policy.

To assist Iowa communities with economic development. Many communities in Iowa lack the resources necessary to develop innovative projects and initiatives designed to improve their economic growth. Communities need assistance in dealing with issues related to community entrepreneurship, community philanthropy and rural/urban policy. Southwest Iowa is considered one of Iowa's economically distressed regions and is in need of assistance in economic development. The region's shares of the state income, jobs, and people are on a downward trend. The workforce is older; many younger workers have relocated.

To enhance the ability of communities to do economic development planning through the quarterly newsletter, the Program Builder Web site, and a data services program that includes ReCAP (Regional Capacity Analysis Program), Take Charge and STATCOMM.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2012	25.0	0.0	12.6	0.0
2013	25.0	0.0	12.6	0.0
2014	25.0	0.0	12.6	0.0
2015	25.0	0.0	12.6	0.0
2016	25.0	0.0	12.6	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Workshops and educational efforts will be conducted with community organizations, individuals and leaders to assist developing and implementing plans for physical and social community improvements. Research and outreach to communities will be done on planning, zoning, resource management, and community and economic development activities using a variety of information dissemination methods. Training sessions will be conducted to improve skills of local government officials, community leaders and individuals. Special services will be developed to aide Iowa communities that suffered from future flooding or other disasters. We will conduct participatory research, outreach and training with leaders, workers and individuals to improve the effectiveness and skills of leaders and volunteers in community organizations.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● Web sites other than eXtension

3. Description of targeted audience

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

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
 - Number of patents submitted
 - Number of peer reviewed publications
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of articles, publications, reports, plans.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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.

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

2012:50 2013:50 2014:50 2015:50 2016:50

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Community planning: Community plans/projects initiated.

2. Outcome Type : Change in Condition Outcome Measure

2012:40 2013:40 2014:40 2015:40 2016:40

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Community planning: Communities with improved civic functioning.

2. Outcome Type : Change in Condition Outcome Measure

2012:30 2013:30 2014:30 2015:30 2016:30

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Community economic development: Communities participating in economic development events.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:180 2013:180 2014:180 2015:180 2016:180

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Community economic development: Number of jobs created or retained.

2. Outcome Type : Change in Condition Outcome Measure

2012:100 2013:100 2014:100 2015:100 2016:100

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 6

1. Outcome Target

Community planning: Communities participating in training sessions.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:1500 2013:1500 2014:1500 2015:1500 2016:1500

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Activities undertaken and expected results could be affected by natural disasters such as the 2008 floods in Iowa which diverted staffing time and effort to dealing with flood and recovery-related activities.

Economic events such as a prolonged recession may also affect the nature of outcomes if budgets and staffing levels are adversely affected.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

ISU Extension Community and Economic Development will continue to conduct roundtable meetings at Town/Craft to identify issues and to re-evaluate existing and develop new strategies for addressing

issues such as: the gap between research and Extension, biofuels and the rural economy, and elder-friendly communities, housing policy, and immigration issues. The Community Visioning Program, will continue to conduct survey and focus group research to facilitate goal setting, as well as post-program assessments through client evaluation and site observation. Extension sociology will continue the annual Iowa Farm and Rural Life Poll. Post-program valuations of program such as PEO training, municipal professionals training, GIS workshops, and planning and zoning workshops will continue.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Global Food Security and Hunger

2. Brief summary about Planned Program

Agricultural production and related up and down stream industries make up the single largest sector of Iowa's economy and is particularly important to the rural communities in the state. Its long term viability is a critical mission of Iowa State University which has a successful history of assisting farmers, suppliers, processors and policy makers and other key decision makers in addressing opportunities and challenges facing agriculture. Technology development via scientific discovery, both basic and applied, has been the hallmark of modern agriculture that has consistently improved the efficiency, safety and sustainability of food, fiber and now fuel production to a growing global population. Adoption of new technologies and practices by farmers holds economic, environmental and social implications at the farm, community and market level. Production, marketing and business skills are needed by farmers to effectively evaluate new opportunities and navigate emerging challenges. Thus, to ensure economic and environmental sustainability of producers and thus enhance food security, Iowa State University's research and extension program must continue to find new discoveries to add value to Iowa commodities, reduce costs through improved efficiency, improve business and marketing skills, develop and apply production efficiencies, model policy outcomes and anticipate new opportunities and challenges facing Iowa agriculture. In addition to increasing the knowledge and skills of producers and the agribusiness sector, production capacity will be enhanced through the adoption of practices that improve yields, reduce input costs, and mitigate the effects of adverse weather conditions on crop and livestock systems.

Because this planned program is very broad and in actuality covers more than 20 knowledge areas, each knowledge area listed may represent additional areas.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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	8%		3%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		6%	
202	Plant Genetic Resources	0%		5%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		4%	
204	Plant Product Quality and Utility (Preharvest)	0%		4%	
205	Plant Management Systems	8%		9%	
212	Pathogens and Nematodes Affecting Plants	0%		8%	
216	Integrated Pest Management Systems	9%		8%	
301	Reproductive Performance of Animals	4%		7%	
303	Genetic Improvement of Animals	4%		14%	
304	Animal Genome	0%		17%	
305	Animal Physiological Processes	0%		7%	
306	Environmental Stress in Animals	9%		1%	
311	Animal Diseases	8%		1%	
401	Structures, Facilities, and General Purpose Farm Supplies	8%		1%	
403	Waste Disposal, Recycling, and Reuse	9%		1%	
405	Drainage and Irrigation Systems and Facilities	8%		1%	
601	Economics of Agricultural Production and Farm Management	8%		1%	
602	Business Management, Finance, and Taxation	9%		1%	
603	Market Economics	8%		1%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Iowa is the second highest ranking state in cash receipts from agriculture at over \$21 billion in 2009. Iowa leads the nation in the production of corn, soybeans, hogs, eggs and ethanol and is in the top ten states in the production of cattle, turkeys, milk, sheep, oats and hay. The state has 31.5 million acres of

farmland in production accounting for 88% of the state's area before excluding lakes, roads and cities. Iowa also ranks third in the number of farms with 88,400, meaning that its vast resources and production is managed by a large number of individuals, making extension education important and challenging. Much of the employment and economic activity occurs beyond the farm gate in the agricultural input and further processing sectors. The success of Iowa farmers depends heavily on these up and down stream firms. They are also important users and deliverers of research-based knowledge originating at Iowa State University and through its collaborations with other land-grant institutions. Iowa's economy is heavily dependent upon agriculture as the state ranks fifth and third in the nation the share of gross state product generated by farming and agricultural processing, respectively (Imerman, Mark, David Swenson, Liesl Eathington and Daniel Otto. The Economic Importance of Agri-Food Industries in Iowa. Department of Economics, Iowa State University, Ames, Iowa 50011. 9/16/05). The vast majority of Iowa counties are rural and are disproportionately dependent on agricultural production, marketing and agribusiness for employment and economic activity. Livestock and poultry production have historically represented half of farm cash receipts, but the increased demand for corn for ethanol production and associated rise in prices for corn and soybeans have increased gross farm income and the share coming from crop production. Increased energy production from land-based renewable sources (biofuels and wind) provides new opportunities for crop producers and land owners, but greater challenges for livestock producers and beginning farmers. New discoveries and adoption in crop and livestock production efficiencies and biofuel production will open these opportunities. Improved policy analysis and farm level decision tools are also needed to help farmers and rural businesses and communities weigh their options.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Iowa has natural resources and a climate well suited for agricultural production of food, fiber and fuel for a growing global population. It has well established infrastructure to market and process well established crops and livestock. Farmers and agribusinesses are well educated and have ready access for information. Iowa State University is a leader in research discovery in production, processing, marketing and risk management of agricultural commodities. ISU Extension is well respected by farmers as a source of research based knowledge to improve their decision making ability. The program's goal is to help farmers achieve long-term profitability of their operations by providing profit enhancing technologies and teaching farmers to evaluate the adoption and implementation of the technology within the farms resource base. The program of work in ensuring profitable producers is an integrated research/extension program focused on farmer success that addresses both opportunities and challenges facing Iowa's agricultural producers. The program is driven by committed individuals working together to achieve a common goal. They are directed by the latest scientific discoveries and direct communication with Iowa farmers to prioritize research and educational needs. The program will use a combination of traditional delivery methods, web-based tools and innovative public-private partnerships to reach farmers. The program will be implemented in an era of declining public funding for agricultural research and education and volatile

prices and narrow margins in Midwest agriculture.

2. Ultimate goal(s) of this Program

The ultimate goals of the program are to ensure the long term profitability of Iowa agricultural producers and increasing production capacity of the agricultural sector while protecting natural resources. Successful producers will readily adopt efficiency enhancing technologies appropriate for their farm and participate in value-added opportunities to improve household income.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2012	69.0	0.0	69.3	0.0
2013	69.0	0.0	69.3	0.0
2014	69.0	0.0	69.3	0.0
2015	69.0	0.0	69.3	0.0
2016	69.0	0.0	69.3	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Continue to be a leading research institution on basic and applied questions impacting to increase Iowa agricultural production capacity. Maintain and strengthen extension education programs targeting Iowa farmers that develop their skills to evaluate and adopt emerging technologies and best management practices. Hire and retain faculty and staff that are committed to the success of Iowa agriculture. Foster integrated research/extension teams to address priorities facing Iowa farmers. Support professional development of faculty and staff to ensure that they are competitive in external funding, respected by peers and producers and proud and productive colleagues.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● Web sites other than eXtension ● Other 1 (radio)

3. Description of targeted audience

Agricultural producers in Iowa and the agribusinesses and agencies that interact with them. Policy makers that impact agriculture.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
 - Number of patents submitted
 - Number of peer reviewed publications
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of producers and agribusiness professionals who attend face-to-face educational activities, including individual consultations.
 - Number of producers and agribusiness professionals who subscribe to newsletters and access web-based resources.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of livestock and crop producers who adopt management and production systems and practices to improve cost control and market access.
2	Number of intergenerational transfers or new farm businesses who learn strategies on how to successfully transition farming operations within their family, or understand the risks and opportunities connected to starting a farming enterprise.
3	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.
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 who learn about crop production and protection strategies that focus on improving agronomic practices.

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:10000 2013:10000 2014:10000 2015:10000 2016:10000

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 303 - Genetic Improvement of Animals
- 304 - Animal Genome
- 305 - Animal Physiological Processes
- 306 - Environmental Stress in Animals
- 311 - Animal Diseases
- 401 - Structures, Facilities, and General Purpose Farm Supplies
- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of intergenerational transfers or new farm businesses who learn strategies on how to successfully transition farming operations within their family, or understand the risks and opportunities connected to starting a farming enterprise.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:35 2013:35 2014:35 2015:35 2016:35

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

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. Outcome Type : Change in Knowledge Outcome Measure

2012:7500 2013:7500 2014:7500 2015:7500 2016:7500

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

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. Outcome Type : Change in Knowledge Outcome Measure

2012:500 2013:500 2014:500 2015:500 2016:500

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 306 - Environmental Stress in Animals
- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

2012:3000 2013:3000 2014:3000 2015:3000 2016:3000

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 6

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

2012:20000 2013:20000 2014:20000 2015:20000 2016:20000

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 403 - Waste Disposal, Recycling, and Reuse
- 405 - Drainage and Irrigation Systems and Facilities
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

The success of the program to ensure profitable producers and increase production capacity will depend upon many factors beyond the control of Iowa State University and the faculty and staff of the program. These include external forces that impact farmers as well as Iowa State University. Farmers and their ability or willingness to adopt new technologies or implement new practices are impacted by factors that affect production and prices and thus short-term profitability. These include natural disasters (drought, flood, frost, etc), market forces that influence input and output prices (supply and demand, trade agreements, exchange rates, interest rates, monetary policy, consumer preferences etc), and

regulation and policy changes (Farm Bill, EPA, FDA, DOE, etc). Likewise, Iowa State University's ability to deliver the program of work is somewhat dependent on funding levels from conventional federal and state sources, competing priorities of public funding agencies, how competitive faculty and staff are at external grants, and short term priorities caused by natural disasters.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Global Food Security and Hunger - Regional Foods Systems

2. Brief summary about Planned Program

Demand for locally produced food including fruits and vegetables as well as livestock products, has shown substantial growth. The ability to enter the local market on a small scale and retain higher farm-to-consumer margins provides opportunities for smaller farms and beginning farmers and other agricultural entrepreneurial businesses. Growth in local farming and associated businesses enhances local community economic development through job creation and general economic activity. In order for this emerging new environment of regional - and local - food systems to grow there is a need for educational programs, technical assistance, supporting infrastructure, leadership capacity building, organizational development and engaging youth, adults and communities. This program will integrate research and extension and multiple programs with collaborators to address the educational needs of producers, consumers, youth and adult, intermediariy businesses, and communities. Program participants will gain knowledge and skills in technical information, economic analysis and human capital training. Through educational programming quantity, quality and accessability of regionally and locally produced foods will increase as will the number of farmers serving this market.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
131	Alternative Uses of Land	20%		20%	
205	Plant Management Systems	20%		20%	
402	Engineering Systems and Equipment	10%		10%	
403	Waste Disposal, Recycling, and Reuse	10%		10%	
404	Instrumentation and Control Systems	10%		10%	
601	Economics of Agricultural Production and Farm Management	20%		20%	
602	Business Management, Finance, and Taxation	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Over the past few decades, the number of farms in Iowa is decreasing while the average size of farms, the average age of farmers and the number of farmers seeking off-farm employment is increasing. At the same time, poor nutrition and health is leading to increased prevalence of childhood obesity, diabetes, metabolic syndrome, high cholesterol, high blood pressure, asthma, sleep disorders, early puberty, low self-esteem, bullying, behavior and learning problems, and depression. Iowa ranks in the bottom 10% of the states in fruit and vegetable consumption. The lack of smaller food processing facilities such as mills, canneries, light processing of fruits and vegetables, community kitchens, and storage and distribution facilities limits the ability for regionally and locally grown products to reach consumers in Iowa and surrounding states.

Demand for locally produced food including fruits and vegetables as well as livestock products, has shown substantial growth. The ability to enter the local market on a small scale and retain higher farm-to-consumer margins provides opportunities for smaller farms and beginning farmers and other agricultural entrepreneurial businesses. Growth in local farming and associated businesses enhances local community economic development through job creation and general economic activity. In order for this emerging new environment of regional - and local - food systems to grow there is a need for educational programs, technical assistance, supporting infrastructure, leadership capacity building, organizational development and engaging youth, adults and communities.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Regional food systems are defined as those foods produced in Iowa and sold within the state and to neighboring states. Regional food systems are valued by communities because of increased job growth and quality of life in communities with increased local food production. Citizens are interested in enhancing their lives. Education enhances individual, family, community, and environmental health; improving human and natural environments improves human health. National attention to these issues helps to promote positive behavior change; distance education and social media changes human behavior. Research/evidence-based information provides evidence of expected outcomes. Extension cannot control most change factors (i.e. the economy, funding, public policy, peer influences, natural disasters, etc.). There is competition for client time and attention, educational niche and funding. Funding for programs is available and can be secured.

2. Ultimate goal(s) of this Program

Develop a robust and resilient regional food system that increases opportunities for Iowa farmers, processors, distributors and marketers of fruits, vegetables, meats and dairy products to prosper and grow

and create wealth and jobs in the state. Iowa consumers will have greater access to locally grown products and will increase consumption of fruits and vegetables to achieve the national average level of consumption. Iowa youth will understand the importance and components of a healthy diet and understand how food is safely produced, stored and prepared. Iowa communities will experience increased economic activity and quality of life associated with a vibrant regional food system.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2012	12.0	0.0	6.1	0.0
2013	12.0	0.0	6.1	0.0
2014	12.0	0.0	6.1	0.0
2015	12.0	0.0	6.1	0.0
2016	12.0	0.0	6.1	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

This program will focus resources and efforts for the following objectives:

1. Improving production, harvest and handling techniques to assure food quality and safety and improve farmer profitability.
2. Enhancing light processing, storage and preparation to assure quality and safety.
3. Educating youth and adult consumers in healthy food choices and food production and preparation.
4. Engaging communities in planning and leadership capacity building to expand opportunities associated with regional foods.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● Web sites other than eXtension ● Other 1 (radio)

3. Description of targeted audience

This program addresses identified needs across Iowa's economy and society. Existing and beginning farmers are increasingly interested in producing value crops and livestock and market them in such a way

as to retain a larger share of consumer expenditures on food. Processors, distributors, retailers and institutions have expressed a strong interest in buying more locally produced food products. These farmers and businesses alike will face new questions and challenges as they conduct more business-to-business transactions, buy in smaller lots and sell closer to the consumer. Extension can meet their needs through applied research and engaged learning opportunities. Consumers' lifestyles today, both adults and youth, promote inactivity and poor diet choices. Education and research-based information about healthy lifestyles will be covered in this program, as will access to and the importance of fresh fruits and vegetables.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of farmers trained and knowledge, awareness, and/or skill development gained in: food safety, GAP, production practices, business planning and management, marketing.
 - Number of processors, manufacturers, distributors, retailers or institutions attending training and receiving technical assistance.
 - Number of youth and families participating in ISUE RLFS lessons and activities such as ISUE 4-H Youth's Growing in the Garden: Local Foods and Healthy Living curriculum and school and out-of-school staff, volunteers, and partners participating in ISUE RLFS trainings.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of acres producing fruits and vegetables.
2	Number of loans supporting fruit and vegetable production.
3	Number of Community Supported Agriculture (CSA) operations, farmers' markets, farm to school chapters, distributors, grocery stores, restaurants, and other institutions buying from Iowa farmers through these channels.
4	Number of meat lockers and specialty meat processing plants, on-farm fluid milk and dairy product processing plants and licensed food processors.
5	Number of cities and/or counties with new or revised comprehensive plans and/or regulations that include language addressing regional food systems.

Outcome # 1

1. Outcome Target

Number of acres producing fruits and vegetables.

2. Outcome Type : Change in Action Outcome Measure

2012:200 2013:300 2014:400 2015:500 2016:600

3. Associated Knowledge Area(s)

- 131 - Alternative Uses of Land
- 205 - Plant Management Systems
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of loans supporting fruit and vegetable production.

2. Outcome Type : Change in Action Outcome Measure

2012:10 2013:15 2014:20 2015:30 2016:40

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of Community Supported Agriculture (CSA) operations, farmers' markets, farm to school chapters, distributors, grocery stores, restaurants, and other institutions buying from Iowa farmers through these channels.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:200 2013:250 2014:300 2015:350 2016:400

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 402 - Engineering Systems and Equipment
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Number of meat lockers and specialty meat processing plants, on-farm fluid milk and dairy product processing plants and licensed food processors.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:50 2013:60 2014:70 2015:80 2016:90

3. Associated Knowledge Area(s)

- 402 - Engineering Systems and Equipment
- 403 - Waste Disposal, Recycling, and Reuse
- 404 - Instrumentation and Control Systems
- 602 - Business Management, Finance, and Taxation

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Number of cities and/or counties with new or revised comprehensive plans and/or regulations that include language addressing regional food systems.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:15 2013:20 2014:25 2015:30 2016:35

3. Associated Knowledge Area(s)

- 402 - Engineering Systems and Equipment
- 403 - Waste Disposal, Recycling, and Reuse
- 404 - Instrumentation and Control Systems
- 602 - Business Management, Finance, and Taxation

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Government Regulations
- Competing Public priorities
- Other (Consumer trends and preferences)

Description

Locally produced foods often sell at a higher price than foods made through conventional production and marketing systems. A continued weak economy will hinder the growth in demand for local foods. Conversely, an economic recovery will improve the demand for and growth of local foods. Location has been identified by the press and media as a significant driver of consumer food purchasing decisions. Changes in consumer preferences for local food will impact the growth potential for local demand in Iowa. In late 2010 Congress passed legislation giving FDA more oversight of food safety regulations and specified exemptions for small volume producers, processors and marketers of foods. If implementation of these regulations is more onerous than expected, or if the buyers in the market place choose to hold small firms to the same standards as the regulated larger firms, then the cost per unit of food sold will make it difficult for smaller firms to compete. Health care cost and nutrition related health problems are getting significant attention in the press and in public policy. If the focus of public policy shifts to other priorities, the attention on healthy diets and funding for research, education and public feeding programs will decline.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Indicators of changes in knowledge, behavior and condition for each outcome have been identified and will be monitored.

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Natural Resources and Environmental Stewardship

2. Brief summary about Planned Program

Wise management of all natural resources, including water, soil, air, and other resources is needed to sustain our nation's ability to produce food, feed, fiber, and biofuels as well as support environmental goods and services and economic and social functions. Without attention to environmental goods and services our quality of life would be greatly impacted. The focus areas of this program encompass all of the natural resources within the highly human-modified agroecosystem. Proper stewardship of natural resources that provide the base inputs for modern agricultural production is foundational to sustaining the desired quantity and quality of food, feed, fiber, and biofuels. Moreover, we need to understand the potential effects of climate change on agriculture and natural resources and the roles that agriculture and natural resources can play to mitigate negative effects of climate change. This program is designed to facilitate research and extension activities and impacts from the field to the globe and depends on an integration of knowledge, science and technology across social, economic bio-physical and agronomic disciplines.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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%		4%	
102	Soil, Plant, Water, Nutrient Relationships	11%		13%	
111	Conservation and Efficient Use of Water	5%		3%	
112	Watershed Protection and Management	6%		5%	
121	Management of Range Resources	0%		1%	
123	Management and Sustainability of Forest Resources	5%		4%	
124	Urban Forestry	0%		6%	
125	Agroforestry	5%		0%	
131	Alternative Uses of Land	6%		1%	
132	Weather and Climate	5%		9%	
133	Pollution Prevention and Mitigation	6%		12%	
134	Outdoor Recreation	0%		7%	
135	Aquatic and Terrestrial Wildlife	5%		23%	
136	Conservation of Biological Diversity	5%		1%	
141	Air Resource Protection and Management	5%		1%	
403	Waste Disposal, Recycling, and Reuse	5%		1%	
405	Drainage and Irrigation Systems and Facilities	10%		0%	
605	Natural Resource and Environmental Economics	10%		4%	
608	Community Resource Planning and Development	5%		5%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Theme 1: Protecting Soil and Water Resources

With the growing demands to produce food, feed, fiber and biofuels from our high quality soils, there comes added responsibility to ensure that the soil remains productive and the water is of sufficient quantity and quality to meet the diverse needs of society. To maintain economic viability of agricultural operations there will be an increased need to ensure environmental stewardship. Unintended consequences

associated with agriculture such as nitrate-nitrogen, phosphorus, and pathogens cause environmental degradation and costs to society. Soil erosion continues to be the number one pollutant of water resources in the state of Iowa. Intensified production systems in the Midwest are adding to a broad range of environmental stressors including pollutant loadings, which, in general, are a primary concern at state and federal levels. Gulf of Mexico hypoxia is among the key off-site impacts of agriculture.

Theme 2: Protecting Air Quality

As animal agriculture has grown and concentrated in Iowa, there have been added environmental challenges relating to air quality. Odor along with nitrogen (NH₃, NO_x, N₂O), methane, hydrogen sulfide and particulate emissions are most pertinent to reducing air quality. The sustainability of animal agriculture in Iowa and elsewhere depends on industrial and governmental entities collective ability to apply appropriate technology, science and policy to ameliorate odor and emission nuisances. Uncertainties of health impacts and nuisance related to exposure to agricultural odors and emission of other gases are a prominent concern in rural and rural/urban fringe parts of Iowa.

Theme 3: Protecting Wildlife, Fisheries, Forests and Wildlands

Whereas Iowa has a small proportion of its land in public ownership, the land that is public is extremely valuable and contributes greatly to the quality of life. Fish and wildlife conservation requires innovative and science-based management solutions. Threatened, endangered and rare plants and animals located in Iowa require special care and management and often coordination across various public and private organizations and individuals. The potential increase of perennial crops could impact wild habitat in many ways. Development of strategies to address utilization and preservation of these natural resources and education on the issues surrounding adverse consequences will help Iowans to better understand and practice environmental stewardship.

Theme 4: Climate Change and Natural Resources

The more recent analyses associated with the impacts of climate change on agriculture suggest that Iowa, the United States and the world would still be able to produce enough food and feed, although certain food insecure regions around the world would be at more risk. There are expected to be some changes in the mix and location of crop and livestock/poultry productivity in Iowa, thus there would be changes in impacts on soil and water resources as well as plant and animal diversity. Understanding and predicting changes in mix and location of agronomic crops and animals due to climate change should allow for better management of natural resources.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

This program depends on and stems from these assumptions or guiding principles:

- Food, feed, fiber, biofuels and environmental goods and services may be provided from the same acre of land.
- Stewardship of soil resources is critical to the long-term production of food, feed, fiber, biofuels and environmental goods and services.
- Water quality and quantity are vital to food, feed, fiber and biofuels productivity.
- Water resources provide a variety of market and non-market goods.
- Environmental, socio-economic and institutional-political factors must be integrated so as to achieve sustainable natural resources.
- Public and private partnerships must be developed to ensure attainment of the goals of this program.
- Public policy related to agriculture, energy and environment will be drivers of change to which the private and public sectors must respond/adapt.
- Weather extremes (temperature and precipitation) will occur and climate change will have various effects on natural resources and the agroecosystem.

2. Ultimate goal(s) of this Program

The goals of this program are to:

- Develop productive, resilient and diverse plant and livestock/poultry production systems that ensure social, economic and environmental goals are met, especially with climate change impacts considered. Addresses Themes 1, 2 and 4.
- Provide effective models of environmental stewardship to protect air, soil, wildlife, woodland, and water quality in concert with a variety of private and public land uses including agricultural, recreational, forestry, wildlife and wildlands and urban. Addresses Themes 1, 2.
- Enhance energy conservation and production of energy from Iowa's renewable resources. Addresses Themes 1, 2, 3 and 4.
- Improve management of Iowa's public lands and natural resources ensuring economic, social, and environmental sustainability. Addresses Theme 3.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2012	13.5	0.0	14.6	0.0
2013	13.5	0.0	14.6	0.0
2014	13.5	0.0	14.6	0.0
2015	13.5	0.0	14.6	0.0
2016	13.5	0.0	14.6	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

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.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
-----------------------	-------------------------

- | | |
|--|--|
| <ul style="list-style-type: none">● Education Class● Workshop● Group Discussion● One-on-One Intervention● Demonstrations | <ul style="list-style-type: none">● Public Service Announcement● Newsletters● Web sites other than eXtension● Other 1 (radio) |
|--|--|

3. Description of targeted audience

This program focuses on the private and public sectors. The "actors" to be engaged with research and extension activities associated with this program include: crop and livestock producers, private citizens, public health officials, state and federal agricultural and natural resource agencies, environmental groups, landowners, homeowners, agricultural and natural resource scientists and engineers, agribusinesses, and policy makers.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of producers, agribusiness professionals, and land-owners who attend face-to-face educational activities, including individual consultations.
 - Number of producers, agribusiness professionals and land-owners who subscribe to newsletters and access web-based resources.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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 acres where the adoption of conservation practices was implemented.
3	Number of producers increasing the efficiency of manure and crop nutrient utilization while minimizing surface run off and preserving ground water quality.
4	Number of Iowa citizens who participate in learning activities that focus on improving water quality and quantity.

Outcome # 1

1. Outcome Target

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. Outcome Type : Change in Knowledge Outcome Measure

2012:600 2013:600 2014:600 2015:600 2016:600

3. Associated Knowledge Area(s)

- 133 - Pollution Prevention and Mitigation
- 141 - Air Resource Protection and Management
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of acres where the adoption of conservation practices was implemented.

2. Outcome Type : Change in Action Outcome Measure

2012:100000 2013:100000 2014:100000 2015:100000 2016:100000

3. Associated Knowledge Area(s)

- 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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:800 2013:800 2014:800 2015:800 2016:800

3. Associated Knowledge Area(s)

- 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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

2012:200 2013:200 2014:200 2015:200 2016:200

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 133 - Pollution Prevention and Mitigation
- 134 - Outdoor Recreation
- 403 - Waste Disposal, Recycling, and Reuse
- 405 - Drainage and Irrigation Systems and Facilities
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

The external factors most likely to impact the outcomes and impacts of this program include the federal agricultural, energy, and environmental policies, advances in technologies such as more accurate climate models, and the general health of the world economy. At the local level, the outcomes depend on the appropriate mix of funded basic and applied research tied strongly to effective extension and outreach programming. Because of the compelling and complex nature of protecting natural resources while meeting food, feed, fiber, and biofuels demands, without sufficient collaboration and innovation between the private and public sectors, attainment of the program goals may be thwarted.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Sustainable Energy - Biofuels and Biobased Products

2. Brief summary about Planned Program

Agriculture is undergoing a revolution -- agriculture is now being called upon to produce fuels, energy, industrial chemicals and materials, without compromising our abilities to produce safe and abundant food. At the same time, we are faced with global climate change and deteriorating water and soil resources and wildlife habitat. New production, processing and product technologies to support advanced biorefineries are needed. Unlike today's biofuels industry, these advanced biorefineries will need to be able to use a variety of feedstocks; employ a blend of thermochemical, biological and bioprocessing technologies to efficiently produce biofuels; and produce a portfolio of primary products (biofuels) and value-added co-products (industrial chemicals, materials, food and feed ingredients, etc.) that can be adjusted to maximize profits.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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	8%		20%	
111	Conservation and Efficient Use of Water	8%		5%	
125	Agroforestry	8%		0%	
131	Alternative Uses of Land	8%		2%	
136	Conservation of Biological Diversity	8%		2%	
205	Plant Management Systems	5%		10%	
302	Nutrient Utilization in Animals	8%		28%	
402	Engineering Systems and Equipment	8%		2%	
403	Waste Disposal, Recycling, and Reuse	8%		2%	
404	Instrumentation and Control Systems	0%		10%	
511	New and Improved Non-Food Products and Processes	7%		10%	
512	Quality Maintenance in Storing and Marketing Non-Food Products	3%		1%	
601	Economics of Agricultural Production and Farm Management	7%		2%	
602	Business Management, Finance, and Taxation	7%		1%	
605	Natural Resource and Environmental Economics	7%		5%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)**1. Situation and priorities**

Agriculture is undergoing a revolution -- agriculture is now being called upon to produce fuels, energy, industrial chemicals and materials, without compromising our abilities to produce safe and abundant food. At the same time, we are faced with global climate change and deteriorating water and soil resources and wildlife habitat. New production, processing and product technologies to support advanced biorefineries are needed. Unlike today's biofuels industry, these advanced biorefineries will need to be able to use a variety of feedstocks; employ a blend of thermochemical, biological and bioprocessing technologies to efficiently produce biofuels; and produce a portfolio of primary products (biofuels) and value-added co-products (industrial chemicals, materials, food and feed ingredients, etc.) that can be adjusted to maximize profits.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

The 2007 Renewable Fuels Standard set the goal of producing 36 million gallons of motor fuels by 2022 (equivalent to about 25% of our motor fuel demand). There appears to be no Congressional sentiment to backing away from this standard. While petroleum prices declined in late 2008 due to the global economic downturn, shortages and high prices are expected to return as soon as the global economy improves. Biotechnology and traditional plant breeding enable the tailoring of crops for biofuels and biobased products as has been done in the past for food, feed and fiber. There are many opportunities to develop cropping systems that increase production as well as improve water and soil qualities. Advances in thermochemical and biological conversion of grain and cellulosic plants and crop residues will make a new fuels and industrial chemicals possible. Some co-products (e.i. biochar) have the potential to return important nutrients to the soil.

2. Ultimate goal(s) of this Program

The U.S. government is committed to advancing bioenergy and the 2009 Renewable Fuels Standard established very high goals. Iowa State University is committed to these goals and doing it with sustainable agricultural production systems. The new ISU BioCentury Research Farm was established as the first integrated research and demonstration farm and processing facility devoted to sustainable biomass production, processing and utilization. We will make Iowa and the Midwest "feedstock ready" for the next generation of advanced biorefineries.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2012	7.0	0.0	9.8	0.0
2013	7.0	0.0	9.8	0.0
2014	7.0	0.0	9.8	0.0
2015	7.0	0.0	9.8	0.0
2016	7.0	0.0	9.8	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

We will focus our 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; developing agronomic practices to produce these feedstocks in sustainable ways to mitigate environmental risks; developing new harvesting, storing and transporting systems for these new feedstocks; and 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.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● Web sites other than eXtension ● Other 1 (radio)

3. Description of targeted audience

This project focuses on basic human needs for environmentally sustainable energy and consumer goods (e.g. building construction materials, plastics and adhesives) and, therefore, we all benefit -- 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.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Biorenewable companies and agricultural producers attending on-site educational activities: workshops, conferences, industry roundtable discussions, field events, and professional development.
- Number of individuals who subscribe to newsletters and access web-based resources that address biorenewable issues.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of producers and service providers who increase their awareness of new crop opportunities and varieties appropriate for bioenergy production.
2	Number of Iowa feedlots that regularly feed DGS to reduce cost of grain.
3	Number of individuals agricultural producers who learn new technologies related to biomass production, harvest, storage, and transportation.
4	Number of individuals who increase their knowledge in production/harvesting/storage systems.
5	Number of individuals who increase their knowledge in understanding business systems.

Outcome # 1

1. Outcome Target

Number of producers and service providers who increase their awareness of new crop opportunities and varieties appropriate for bioenergy production.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:200 2013:200 2014:200 2015:200 2016:200

3. Associated Knowledge Area(s)

- 125 - Agroforestry
- 131 - Alternative Uses of Land
- 205 - Plant Management Systems
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:7500 2013:7500 2014:7500 2015:7500 2016:7500

3. Associated Knowledge Area(s)

- 302 - Nutrient Utilization in Animals
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

2012:750 2013:1000 2014:1200 2015:1200 2016:1200

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 125 - Agroforestry
- 131 - Alternative Uses of Land
- 136 - Conservation of Biological Diversity
- 205 - Plant Management Systems
- 402 - Engineering Systems and Equipment
- 601 - Economics of Agricultural Production and Farm Management
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Number of individuals who increase their knowledge in production/harvesting/storage systems.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:200 2013:250 2014:300 2015:300 2016:300

3. Associated Knowledge Area(s)

- 402 - Engineering Systems and Equipment
- 403 - Waste Disposal, Recycling, and Reuse
- 404 - Instrumentation and Control Systems
- 511 - New and Improved Non-Food Products and Processes
- 512 - Quality Maintenance in Storing and Marketing Non-Food Products
- 602 - Business Management, Finance, and Taxation

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Number of individuals who increase their knowledge in understanding business systems.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:200 2013:250 2014:300 2015:300 2016:300

3. Associated Knowledge Area(s)

- 511 - New and Improved Non-Food Products and Processes
- 512 - Quality Maintenance in Storing and Marketing Non-Food Products
- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Probably the greatest external factor is what happens to future demand and supply of traditional energy sources, and federal policy on reducing greenhouse gasses. Price volatility in petroleum and farm commodities also adds complexity, financial risk and business uncertainty. The current economic climate does not provide much profitability and prolonged low margins could damage investor confidence. Feedstock commodities must be produced at attractive prices; draught and other natural disasters could be devastating to these new ventures. Government support and regulatory programs

are important in early stages to compete against well-established industries and gain market footholds. Unwarranted adverse publicity has plagued the biofuels industry and the populace must be better educated, this will require investment in education and extension outreach. Most of all, funding for research and outreach activities is paramount.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Food Safety

2. Brief summary about Planned Program

Food safety education is an important component of ensuring good health for Iowans. It is important to ensure safe food handling behaviors are practiced by consumers, food processors and producers, and retail food services. Implementing safe food handling from farm to fork will reduce incidences of food borne illness. We plan to continue direct delivery of education through educational classes, workshops, discussions, webinars, one-on-one interventions and hotlines as well as indirect delivery methods through public service announcements, billboards, newsletters, radio/television media programs and websites. A national food safety certification program (ServSafe®) will continue to be offered. Food safety information based on the most recent scientific evidence will serve as the content for programming. With new federal food safety legislation; concerns of food safety risks from fresh produce coupled with emphasis on increased fruit and vegetable consumption and interest in school gardens, farm to school, and food preservation as well as continuing increases in food consumed that is prepared away from home, food safety programming is an integral component of nutrition and health.

Because a large percentage of the US population lives in an urban or suburban environment, they have little awareness or knowledge of the processes involved in growing food at the production level. Yet there is concern among consumers regarding food safety and quality during production phases, as well as animal health and well being. Consumers need access to information and education in these areas so they can be reassured as to the safety and humane measures embedded in American agriculture production.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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%		4%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	25%		77%	
723	Hazards to Human Health and Safety	20%		19%	
806	Youth Development	5%		0%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)**1. Situation and priorities**

Recent data (CDC, 2010) estimates there are 48 million cases of foodborne illness in the U.S. each year, with a resulting 3,000 deaths. The percentage of at-risk Americans, those who are more susceptible to a foodborne illness or severe complications, continues to grow: those younger than age 9, those older than age 60, those who suffer from chronic or debilitating conditions, and pregnant women. Increasing diversity in the workforce of retail foodservices (NRA, 2008), increasing consumption of food prepared away from home (USDA, 2008), increasing reliance on food assistance programs, increasing pressures to consume more fruits and vegetables, increasing interest in home gardening and food preservation and decreasing knowledge of food preparation skills contribute to the need to ensure consumers, food producers, and food workers in processing and retail establishments understand and practice fundamental safe food handling and cleaning and sanitizing practices. The Child Nutrition Reauthorization Act of 2010 emphasizes consumption of fresh produce and implementation of school gardens and farm to school programs. The proposed Iowa Food and Farm plan (January, 2011) stressed the importance of food safety as an integral part of regional food systems.

Because much of the public relies on dietary professionals for reliable, factual education information, guidelines, and recommendations regarding dietary practices for good health, it is imperative that these professionals have a sound understanding of the food production cycle as it pertains to how food is produced. Consumers are sometimes subject to media reports of harsh treatment of animals destined for human consumption. They need unbiased information about the welfare of livestock in the food chain. With this kind of knowledge, these professionals are able to reassure consumers about the safety of food all along the production stages. Food processors and their personnel also need constant food safety

education to identify potential food safety hazards, from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

- Continued resources and funding can be secured to support food safety outreach programs - direct and indirect delivery.
 - National focus on overweight/obesity and greater public awareness about good nutrition will encourage individuals and foodservices to offer more fresh produce menu items
 - Education increases knowledge and influences attitudes, which can lead to behaviors consistent with recommended safe food handling practices.
 - Multiple communication methods and styles will be necessary to address changing demographics in Iowa and the U.S.

2. Ultimate goal(s) of this Program

Reduce the number of reported foodborne illnesses and increase the number of food producers and workers certified in food safety.

Ensure consumers are aware of current safe practices at the farm level of food production.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2012	10.0	0.0	2.5	0.0
2013	10.0	0.0	2.5	0.0
2014	10.0	0.0	2.5	0.0
2015	10.0	0.0	2.5	0.0
2016	10.0	0.0	2.5	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Conduct workshops and facilitate meetings. Workshops include ServSafe® Certification food safety, food preservation, HACCP implementation and GAPS preparation.
- 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.
- Provide training and technical assistance in the dairy, beef and swine industries.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> • Education Class • Workshop • Demonstrations 	<ul style="list-style-type: none"> • Newsletters • Web sites other than eXtension • Other 1 (Blogs) • Other 2 (SafeFood Fairs)

3. Description of targeted audience

Food growers, food processors, foodservice management and staff in commercial and noncommercial operations, consumers, and food stand volunteers will be served.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of adult participants in Extension programs on food safety.
- Number of hits on Iowa State University Extension food safety project websites.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of people receiving food safety certification.
2	Percent of adult EFNEP/FNP graduates with a positive change in food safety practices.
3	Number of consumers who understand modern livestock practices as they pertain to animal health and comfort, quality and safety.
4	Number of dietary professionals that understand modern livestock practices as they pertain to animal health and comfort, quality and safety.
5	Number of youth and teachers that increase their awareness of modern livestock practices as they pertain to animal health and comfort, quality and safety.
6	Million dollars saved throughout the food chain by implementing Quality Management Systems through educational programs such as the Iowa Quality Grain Initiative, Pork Quality Assurance Plus® and Transport Quality Assurance®

Outcome # 1

1. Outcome Target

Number of people receiving food safety certification.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:2500 2013:2500 2014:2500 2015:2500 2016:2500

3. Associated Knowledge Area(s)

- 503 - Quality Maintenance in Storing and Marketing Food Products
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:75 2013:75 2014:75 2015:75 2016:75

3. Associated Knowledge Area(s)

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

2012:1000 2013:1000 2014:1000 2015:1000 2016:1000

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems
- 315 - Animal Welfare/Well-Being and Protection

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

2012:100 2013:100 2014:100 2015:100 2016:100

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems
- 315 - Animal Welfare/Well-Being and Protection

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Number of youth and teachers that increase their awareness of modern livestock practices as they pertain to animal health and comfort, quality and safety.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:100 2013:100 2014:100 2015:100 2016:100

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems
- 315 - Animal Welfare/Well-Being and Protection
- 703 - Nutrition Education and Behavior
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 6

1. Outcome Target

Million dollars saved throughout the food chain by implementing Quality Management Systems through educational programs such as the Iowa Quality Grain Initiative, Pork Quality Assurance Plus® and Transport Quality Assurance®

2. Outcome Type : Change in Action Outcome Measure

2012:6000 2013:6000 2014:6000 2015:6000 2016:6000

3. Associated Knowledge Area(s)

- 308 - Improved Animal Products (Before Harvest)
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect 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 (outbreaks; food recalls)

Description

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 regulations to improve food safety will impact number of participants. Federal legislation is encouraging farm to school and school garden programs. A proposed state food and farm plan encourages regional food systems and stresses infusion of food safety trainings from farm to fork. Increasing interest in indirect delivery methods continue for individuals and work organizations. Several of the educational materials available via the food safety project website are in Spanish and/or limited text, such as the new Flash animations about proper glove use and handwashing posters. The diversity of the population in Iowa continues to change and challenges programming efforts that are sensitive to ethnic cultures. Younger generations expect new technology such as iPhone apps. Extension in this state continues to experience loss of staff. Reductions in staff are also fueling the demand for more programming via technology. Widespread outbreaks of foodborne illness and national recalls of food items require rapid responses to these emerging issues.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

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. Two priority programs in food safety were identified: a certification program and a program with fundamental food safety messages. Numbers of participants in certification classes and state pass rate are collected. Number of participants in non-certification program classes are tracked.

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Childhood Obesity - Prevention

2. Brief summary about Planned Program

Audiences will learn about the myriad of factors in the current socioeconomic environment contributing to overweight and obesity including genetics, the feeding relationship, lack of physical activity, technology, portion distortion, and food availability. A series of nutrition lessons to youth from low-resource elementary schools and neighborhood centers will be taught by ISUE staff. Parent newsletters, nutrition education displays during parent-teacher meetings and conferences, and nutrition presentations to parent groups as appropriate will be used to convey nutrition messages to the parents. Training and technical assistance will be provided to school districts throughout the state to enhance and improve implementation of local school wellness policies. Through a Team Nutrition grant school districts will have the opportunity to develop and implement farm to school programs throughout the state. Finally, childcare providers statewide will have the opportunity to receive training for state licensure and Child and Adult Care Food Program certification.

Iowans are practicing behaviors that lead to a high risk of obesity, which leads to increased incidence of heart disease, diabetes, certain types of cancer, and chronic diseases that can lead to disability. These chronic diseases not only exert an economic strain (healthcare and work productivity), but decrease longevity and quality of life.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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	75%		95%	
704	Nutrition and Hunger in the Population	25%		5%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

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.

Iowans Fit for Life (CDC obesity prevention program) has collected data on obesity among Iowa children. In Spring 2009, among 1,218 third graders 14% of children were obese and 16% were overweight. YRBSS data indicate that 13.5% of Iowa youth are overweight, while 11.3% are obese.

Obesity among youth increases the risk of developing chronic diseases such as type 2 diabetes, hypertension, cardiovascular disease, and joint disorders. These chronic diseases among youth not only exert a financial strain (healthcare and worker productivity), but decrease longevity and quality of life.

Fruits and Vegetables

Data from CDC's National Youth Risk Behavior Survey¹ (YRBSS) were compared from 1991 to 2007. In Iowa, just 19.8% (down from 29%) of children in grades 9-12 reported eating five servings of fruits and vegetables in 2007. The lack of variety of vegetables consumed is of concern as well. Self-reported intakes of fruits and vegetables among fifth-grade children participating in Nutrition Network school-based projects were collected on pre-post surveys in 2008. Students reported number of times per day they ate fruit (average number of times = 1.72 pre, 1.88 post, $p = .01$) and vegetables (1.65 pre, 1.77 post $p = .01$).

Physical Activity and Television Time

Just over 50% of Iowa youth reported being physically active for a total of 60 minutes or more per day on five or more of the past seven days: females 49.9%, males 56.9%.

Sedentary activities such as watching television or videos and using computers have been noted as a factor affecting childhood obesity. Television may be the most important factor as it is easy to engage in eating while watching television. In the 2005 Iowa Child and Family Household Health Survey, 90% of Iowa children who watched some television daily watched an average of two hours. Among older youth responding to the Youth Risk Behavior Survey in 2005, 29% reported watching three or more hours per day of television on an average school day.

¹Centers for Disease Control and Prevention (CDC). *Youth Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services.

2. Scope of the Program

- In-State Extension
- In-State Research
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

- Continued resources and funding can be secured to support these nutrition programs.
- National focus on overweight/obesity and greater public awareness will continue to mobilize communities to adopt behaviors that combat overweight/obesity.
- Education improves individual, family, community, and environmental health.
- Research/evidence-based information produces expected outcomes.

2. Ultimate goal(s) of this Program

Slow or stop increasing rates of childhood overweight and obesity through nutrition education, promotion of physical activity opportunities, and community advocacy for health promoting nutrition, physical activity, and food availability.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2012	5.0	0.0	1.4	0.0
2013	5.0	0.0	1.4	0.0
2014	5.0	0.0	1.4	0.0
2015	5.0	0.0	1.4	0.0
2016	5.0	0.0	1.4	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

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

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Other 1 ((Team Nutrition training)) 	<ul style="list-style-type: none"> ● Newsletters ● Web sites other than eXtension

3. Description of targeted audience

School aged youth, child care providers, school staff and other adult mentors of youth.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

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

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

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 Target

Percent of youth participants reporting increased intake of milk.

2. Outcome Type : Change in Action Outcome Measure

2012:15 2013:15 2014:15 2015:15 2016:15

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Percent of youth participants reporting increased intake of fruit.

2. Outcome Type : Change in Action Outcome Measure

2012:10 2013:10 2014:10 2015:10 2016:10

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Percent of youth participants reporting increased intake of vegetables.

2. Outcome Type : Change in Action Outcome Measure

2012:8 2013:8 2014:8 2015:8 2016:8

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

Percent of youth participants reporting increased physical activity.

2. Outcome Type : Change in Action Outcome Measure

2012:15 2013:15 2014:15 2015:15 2016:15

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:75 2013:75 2014:75 2015:75 2016:75

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

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(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

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 7% 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.

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Climate Change

2. Brief summary about Planned Program

Climate change is much more than simply a rise in temperature. Other climate factors, specifically the frequency of extreme precipitation events, rise in humidity, and length of the growing season, are having much more impact on Iowa than changes in annual mean temperature. We know from geological records that the climate of Iowa, like other regions of the Midwest and even the entire planet, has always been changing. Climate changes in Iowa are linked, in very complex and sometimes yet unknown ways, to global climate change. Independent evidence of a warming climate comes from temperature trends at both the surface and in the upper atmosphere, trends in melting of continental glaciers and arctic and sea ice, ocean temperatures, and increases in atmospheric moisture. Biological evidence consistent with climate trends points to decline of coral resulting from warmer ocean water, earlier blooming of widely observed plants such as lilacs, altered seasonal migration patterns, and changes in plant hardiness zones.

Of all natural hazards, floods, water-logged soils, and droughts have the highest impact on Iowa's economy. More research is needed to better understand why Iowa's precipitation extremes are increasing and whether these increases will continue. Improvements in seasonal climate predictions would enable Iowa decision-makers to better prepare for these extremes and reduce their economic impact when they occur. Climate change will increase stress on our natural resources, require adaptations in our agricultural practices, and create economic and public policy challenges.

To better understand what global climate change means, and deal with its effects, we need to know much more than we do. And this knowledge needs to come from unbiased science. The complex issue of climate change requires multi-disciplinary perspectives. ISU faculty and specialists in water quality, the environment, and communities along with agricultural researchers, planners, economists, and climate and soil specialists will work together to develop the needed information. Researchers will develop conservation strategies, risk management strategies and practical information on best responses to climate change. Extension will provide outreach to provide Iowans information for responding to change.

Agricultural Experiment Station researchers and Extension will provide key information and support:

- Investigating natural environment responses to warming and wildlife responses to changing habitats.
- Developing plant diversity and production strategies to reduce crop vulnerability.
- Identifying potential changes in soil microbes and threats from invasive pests.
- Developing conservation strategies in agricultural inputs to slow or lessen the impact of climate change.
- Monitoring climate and using tools such as remote sensing to map and monitor resources.
- Analyzing carbon sequestration and biomass.
- Giving advice to farmers on how to respond to fluctuations and stresses created by climate change.
- Providing advice to communities on how to respond to flooding and climate fluctuation issues.

3. Program existence : New (One year or less)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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	0%		20%	
104	Protect Soil from Harmful Effects of Natural Elements	40%		30%	
132	Weather and Climate	25%		20%	
605	Natural Resource and Environmental Economics	25%		20%	
608	Community Resource Planning and Development	10%		10%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Climate Change research and extension activities are widely dispersed across departments and programs at ISU. As needs develop and awareness of climate change issues grow, better coordination of activities and evaluation of efforts will be needed. It will be developed in the coming years as educators are convened, research is assessed, and effective education and outreach are planned. The goal of this coordinated effort is to:

1. Discover the actual and potential implications of climate change on crop and ecological systems, economies and other sectors.
2. Enhance the public's engagement and receptivity to implications of climate change regardless of causality, and
3. Transfer knowledge that allows producers and environmental control agents to adapt to climate change by seizing the opportunities of new crops, new varieties and new management practices that maintain the viability of production economics and infrastructures while minimizing damage from invasive pests, diseases and changes in the hydrologic system.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research

- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

1. Climate change may affect a myriad of aspects of the condition of agricultural production, environmental control, family and community life. Planning Extension's response must involve many disciplines.
2. Baseline research and needs assessment must be examined in order to chart the future of programming.
3. Climate change is a contentious issue. Neutrality regarding cause and blame must undergird the program, while proactive thinking engages stakeholders in addressing the affects of climate change.

2. Ultimate goal(s) of this Program

The ultimate goal of this program is to assure that decision-makers across selected target audiences are practicing adaptive practices that address the effects of climate change.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2012	1.5	0.0	3.2	0.0
2013	1.5	0.0	3.2	0.0
2014	2.0	0.0	3.2	0.0
2015	2.0	0.0	3.2	0.0
2016	2.0	0.0	3.2	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Priorities for 2010-2011 will be to conduct and synthesize adaptation research, develop resources and strategies to increase climate literacy in target audiences, and train decision-makers in new practices to ensure communities are prepared. The program coordinator will attract educators and program leaders from many parts of Extension to consider content that should shift in their programming so that it addresses climate change. By the end of five years, content will change in programs of ISU Extension.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (webinars) 	<ul style="list-style-type: none"> ● Web sites other than eXtension

3. Description of targeted audience

As programming is developed, audiences will be targeted. Targeted audiences must be those with whom we can make a difference, and who can benefit from research-based information. Primarily, we will choose audiences whose production systems will be influenced by climate change, as well as those who consult or influence the decision-makers of these growers and producers. Secondary audiences to be considered will be decision-makers and leaders responsible for preparing communities for change. This includes local government jurisdictions, state and local elected officials, producers and environmental groups, human health services, FEMA, and Extension educators working in food and nutrition, family and community planning and development issues.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of Producers and Community leaders who increase their knowledge of climate change information and how it impacts environment, production systems, and urban systems.
2	Number of Producers who incorporate climate change information into production practices and communities that upgrade city plans reflecting climate change information

Outcome # 1

1. Outcome Target

Number of Producers and Community leaders who increase their knowledge of climate change information and how it impacts environment, production systems, and urban systems.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:1000 2013:1000 2014:1000 2015:1000 2016:1000

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 132 - Weather and Climate
- 605 - Natural Resource and Environmental Economics
- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of Producers who incorporate climate change information into production practices and communities that upgrade city plans reflecting climate change information

2. Outcome Type : Change in Action Outcome Measure

2012:500 2013:500 2014:500 2015:500 2016:500

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 132 - Weather and Climate
- 605 - Natural Resource and Environmental Economics
- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect 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.)

Description

{NO DATA ENTERED}

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

{NO DATA ENTERED}