

# 2011 Iowa State University Combined Research and Extension Plan of Work

Status: Accepted

Date Accepted: 04/07/2010

## 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, the Iowa State University (ISU) Combined Extension and Research Plan of Work for 2011-2015 remains organized under our current eight broad program areas, the only change being the renaming of the "Biofuels and Biobased Products" to "Sustainable Energy":

- Iowa Youth Development
- Families: Expanding Human Potential
- Community and Economic Development
- Helping Rural Iowans Prosper
- Improving Nutrition and Enhancing Food Safety
- Protecting Natural Resources
- Ensuring Profitable Producers
- Sustainable Energy

We anticipate reorganizing and more fully incorporating the USDA priorities for the 2012-2016 plan.

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 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
2011	400.0	0.0	155.0	0.0
2012	400.0	0.0	155.0	0.0
2013	400.0	0.0	155.0	0.0
2014	400.0	0.0	155.0	0.0
2015	400.0	0.0	155.0	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

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 Iowans 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. 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 efficiency?**

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**

<b>S. No.</b>	<b>PROGRAM NAME</b>
1	Iowa Youth Development
2	Families: Expanding Human Potential
3	Community and Economic Development
4	Helping Rural Iowans Prosper
5	Food Security, Human Nutrition, and Food Safety
6	Ensuring Profitable Producers
7	Natural Resources and Environmental Stewardship
8	Sustainable Energy

**V(A). Planned Program (Summary)****Program # 1****1. Name of the Planned Program**

Iowa 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%	
	<b>Total</b>	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**

- 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, caring, contributing, confident, connected and capable people. 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, caring, contributing, confident, connected and capable 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
2011	45.0	0.0	0.0	0.0
2012	45.0	0.0	0.0	0.0
2013	45.0	0.0	0.0	0.0
2014	45.0	0.0	0.0	0.0
2015	45.0	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

- 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).
- Collect annual data on the current status of youth enrolled in afterschool settings, development of innovative and emerging 4-H club models, retention of first-year 4-H club members, facilitated volunteer trainings, and the development of local partnership.
- Train volunteers working with committees and boards regarding strong youth-adult partnership strategies• Train and support staff, volunteers, and community partners regarding best practices of positive youth development principles, practices, and environments; afterschool program development; 4-H quality club management; 4-H club member retention; reaching youth residing in urban areas; innovative and emerging 4-H club structures; and volunteer development.
- 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.
- Create and support a statewide volunteer development training system for 4-H staff and volunteers.
- Assess county enrollment trends and identify barriers that limit enrollment, retention and participation of youth in 4-H club programs.
- Partner with state and national entities to collect and report afterschool impact data. • Conduct afterschool programming in counties with children and youth.
- Raise awareness of the needs and benefits of afterschool, club, volunteer, and youth-adult partnership programming across the state.
- Conduct statewide research study examining members' self-perceptions of gains in citizenship, leadership, and communication skills/knowledge and behavior/practices after participating in 4-H clubs.

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

**Extension**

<b>Direct Methods</b>	<b>Indirect Methods</b>
-----------------------	-------------------------

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

**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)**

**1. Standard output measures**

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	4500	58000	90000	28000
2012	4500	58000	90000	28000
2013	4500	58000	90000	28000
2014	4500	58000	90000	28000
2015	4500	58000	90000	28000

**2. (Standard Research Target) Number of Patent Applications Submitted**

**2011:0                      2012:0                      2013:0                      2014:0                      2015:0**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2011	2	2	4
2012	2	2	4
2013	2	2	4
2014	2	2	4
2015	2	2	4

**V(H). State Defined Outputs**

**1. Output Target**

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

**2011:3500                      2012:3750                      2013:4000                      2014:4250                      2015:4250**

- Number of volunteers completing two trainings/yr

**2011:1850                      2012:1900                      2013:1950                      2014:2000                      2015:2000**

- Number of youth who participate in 4-H Afterschool

**2011:13000                      2012:13500                      2013:14000                      2014:14500                      2015:14500**

- Number of local partnerships initiated or strengthened

**2011:1700                      2012:1750                      2013:1800                      2014:1850                      2015:1850**

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

**2011:25                      2012:30                      2013:35                      2014:40                      2015:40**

**V(I). State Defined Outcome**

O. No.	Outcome Name
1	Communication: Percentage of youth who participate in a 4-H experience will self-report a 1-point increase in skills or knowledge in the content areas of writing a speech/presentation, delivering a speech/presentation, developing supportive visuals, recognizing and utilizing active listening skills, asking clarifying questions, sharing ideas, communicating non-verbal messages and expressing feelings appropriately.
2	Communication: Percentage of youth who participate in a 4-H experience will self-report that they practice effective communication skills in sending and receiving written, visual and oral messages.
3	Citizenship: Percentage of youth who participate in a 4-H experience will self report a 1-point increase in skills or knowledge in the content areas of practicing good character, planning and organizing service learning events, and actively engaging in local, state and national issues.
4	Citizenship: Percentage of youth who participate in a 4-H experience will self-report that they demonstrate good character traits, service learning, planning and organizational skills, and engagement in community issues.
5	Leadership: Percentage of youth who participate in a 4-H experience will self report a 1 point increase in skills or knowledge in the content areas of setting goals, working cooperatively in a team, communication effectively, and making decisions based on data and the opinions of others, honoring individuals differences and handling conflict.
6	Leadership: Percentage of youth who participate in a 4-H experience will self report that they demonstrate the ability to influence and support others in a positive manner for a common goal.

**Outcome # 1****1. Outcome Target**

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

**2. Outcome Type : Change in Knowledge Outcome Measure**

<b>2011:70</b>	<b>2012:71</b>	<b>2013:72</b>	<b>2014:73</b>	<b>2015:74</b>
----------------	----------------	----------------	----------------	----------------

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 2****1. Outcome Target**

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

**2. Outcome Type : Change in Action Outcome Measure**

<b>2011:71</b>	<b>2012:72</b>	<b>2013:73</b>	<b>2014:74</b>	<b>2015:75</b>
----------------	----------------	----------------	----------------	----------------

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 3****1. Outcome Target**

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

**2. Outcome Type : Change in Knowledge Outcome Measure**

<b>2011:77</b>	<b>2012:78</b>	<b>2013:79</b>	<b>2014:80</b>	<b>2015:80</b>
----------------	----------------	----------------	----------------	----------------

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 4**

**1. Outcome Target**

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

**2. Outcome Type : Change in Action Outcome Measure**

<b>2011:73</b>	<b>2012:74</b>	<b>2013:75</b>	<b>2014:76</b>	<b>2015:76</b>
----------------	----------------	----------------	----------------	----------------

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 5**

**1. Outcome Target**

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

**2. Outcome Type : Change in Knowledge Outcome Measure**

<b>2011:67</b>	<b>2012:68</b>	<b>2013:69</b>	<b>2014:70</b>	<b>2015:70</b>
----------------	----------------	----------------	----------------	----------------

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 6**

**1. Outcome Target**

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

## 2. Outcome Type : Change in Action Outcome Measure

2011:71

2012:72

2013:73

2014:74

2015:75

## 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

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

#### Description

- Available funding at the national, state and local levels for Extension outreach
- Changes in national and or state
- Extension programmatic priorities.
- Breadth of collaborative partnership development with local, state and national agencies and organizations and institutions.
- Natural disasters such as floods and tornadoes that uproot communities, families, and youth
- Unreliable baseline data.

## V(K). Planned Program (Evaluation Studies and Data Collection)

### 1. Evaluation Studies Planned

- After Only (post program)

#### Description

Randomly selected 4-H club members representing five counties in each of the five Iowa Extension areas will participate in the study. 4-H Youth Field Specialists will work in partnership with County Extension Education Directors to collect impact data that examines self-reported changes in 4-H Club members' citizenship, leadership, and communication **knowledge/skills** after participating in 4-H as compared to before participating in 4-H. Additionally, impact data will be collected that examines self-reported changes in 4-H Club members' citizenship, leadership, and communication **behavior/practices** after participating in 4-H as compared to before participating in 4-H.

### 2. Data Collection Methods

- Sampling

## Description

- Introduce yourself to the 4-H Club members. Ask the 4-H Club members to share the best thing about being involved with 4-H.
- Ask the 4-H Club members to complete the verbal assent form.
- For those 4-H Club members who do not want to participate, ask them to please go with the 4-H Club Leader to participate in an activity in the designated location.
- Use the attached script as a guide to further explain the self-assessment process.
- Explain to the youth that you will be reading each statement on the self-assessment tool one statement at a time. Explain that after each statement is read aloud, the youth will be asked to circle the numbered box that best represents their level of agreement.
- Emphasize the first section of the front page of the self-assessment tool asks 4-H Club members to indicate their current knowledge of the corresponding citizenship, leadership, or communication skill. Emphasize the second section of the front page of the self-assessment tool asks 4-H Club members to remember back to the time before they joined 4-H and to indicate their knowledge of the corresponding citizenship, leadership, or communication skill.
- Read each statement one at a time saying from the first section, "AFTER participating in 4-H, how much do you know about...?"
- Read each corresponding statement one at a time from the second section saying, "BEFORE participating in 4-H, how much did you know about...?"
- Once the first (After) and second (Before) sections of the front page of the self-assessment tool are completed, ask the 4-H Club members to turn the document over. Explain to the youth you will be reading each statement on the back side of the self-assessment tool one statement at a time. Explain after each statement is read aloud, the youth will be asked to circle the numbered box that best represents their level of agreement.
- Emphasize the first section of the back page of the self-assessment tool asks 4-H Club members to indicate their current ability to show citizenship, leadership, or communication behavior/actions. Emphasize the second section of the back page of the self-assessment tool asks 4-H Club members to remember back to the time before they joined 4-H and to indicate their former ability to show citizenship, leadership, or communication behavior/actions.
- Once the 4-H Club members have completed the entire self-assessment tool, thank them for their time and responses. Share with the 4-H Club members you would like to learn important types of citizenship, leadership, and communication knowledge and strengthened citizenship, leadership, and communication behavior/actions that young people gain by participating in 4-H. Ask the 4-H Club members the debriefing questions found on the 4-H Club Member Debriefing Questions document and record their responses.
- When the debriefing questions are completed, be sure to thank the 4-H Club members once again for their time and feedback. Share with the 4-H Club members their responses will assist 4-H staff and volunteers in working in partnership with youth to develop fun and educational learning opportunities with Iowa's young people.



## **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 emotional, physical and financial health and well being. Iowans understand the struggles that many individuals face and recognize the value of high quality, affordable early childhood care and education, the need for effective parenting, the strengths inherent in our multi-generational population; the importance of exercise, nutrition and food safety, and the ability to handle family finances and actualize plans for the future. Iowans support working collaboratively at the community level to impact public issues such as poverty, food insecurity.

ISUE educational programs delivered in a variety of ways will help Iowans improve nutrition knowledge and behavior to reduce negative health consequences brought about by overweight, obesity, and inactivity; improve food handling behaviors and practices by consumers, food processors and food services to reduce the incidence of food borne illness in the state. Families at all economic levels will learn and practice ways to maximize their resources, strengthen their decision making skills. Families across the lifespan will gain access to information, skills and resources that encourage positive growth and development in areas related to parenting, couple relationships, home accessibility, care giving and long term care. Programming will increase community awareness about critical issues facing families, and teach processes that address their needs across the lifespan. Participants will identify community problems and assets, create collaborative relationships, and develop self advocacy skills to improve their quality of life. Programming will increase citizen participation and move communities to action.

**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
501	New and Improved Food Processing Technologies	2%		0%	
504	Home and Commercial Food Service	2%		0%	
607	Consumer Economics	5%		0%	
703	Nutrition Education and Behavior	20%		0%	
704	Nutrition and Hunger in the Population	2%		0%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	4%		0%	
801	Individual and Family Resource Management	20%		0%	
802	Human Development and Family Well-Being	20%		0%	
803	Sociological and Technological Change Affecting Individuals, Families and Communities	6%		0%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	5%		0%	
805	Community Institutions, Health, and Social Services	14%		0%	
	<b>Total</b>	100%		0%	

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

Poverty is often hidden in Iowa. The number of working poor is increasing and the rural urban gap is growing. Economic pressures have long term negative consequences for children and families. Solutions lie in both individual and collective/community response. Iowa's diversity is also changing, which 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.

Iowans are practicing behaviors that lead to high risk of obesity, diabetes, and food borne illnesses. A significant portion of the population fails to follow dietary and activity recommendations. There is an increasing rate of overweight and obesity among children.

According to the BRFSS (Behavior Risk Factor Surveillance System) data, 37% of Iowa adults are overweight and 27.7% are obese. BRFSS data suggest that only 20% of adult Iowans consume the recommended servings of fruits and vegetables. Approximately 50% of income spent is for food consumption away from home. There are an estimated 76 million cases of food borne illness yearly. Iowa surpassed the national average for those considered food insecure this past year (national average 10.6%; Iowa 11.6%.) Iowa has almost 90,000 households with 100,000 children who are food insecure.

There is growing evidence that increased marital and family instability are negatively impacting children, adults, families, and communities. This trend is supported by data that indicate one-quarter of all marriages will likely end by the seventh year of marriage and approximately half of all marriages will end before their 20th year. The research is clear that healthy relationships and healthy marriages, and resulting family stability, benefit the physical, social, and emotional well-being of adults and children as well as the community. Studies have shown that children in healthy marital and family environments tend to perform better in school, have fewer emotional and behavioral problems. Couples who have healthier relationships

have comparatively lower levels of stress and emotional issues. Research indicates that adults in healthy couple relationships tend to be more involved in their communities such as in schools and churches. They also tend to be better employees with lower rates of absenteeism, greater work commitment, and higher levels of productivity.

Fourteen percent of Iowa's children (17% under the age of 4 and 11% ages 5-17) were living in poverty in 2007. Iowa ranks second in the nation in the percentage of families with children under the age of six with both parents working. Iowa lags behind in the quality of child care. 22% of Iowa early care and education is rated as poor in quality, 58% is rated as mediocre, while only 20% is rated as good quality.

People 85 and over are in Iowa's fastest growing age group with over 65,000 living in the state. Yet, few homes make appropriate home modifications for accessibility.

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. Rural communities face growing challenges in retaining well-paying job opportunities and the array of services desired by families across the lifespan.

**2. Scope of the Program**

- In-State Extension
- Multistate 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.

**2. Ultimate goal(s) of this Program**

Individuals, families and community institutions will work collaboratively to improve quality of life.

**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
2011	54.0	0.0	0.0	0.0
2012	54.0	0.0	0.0	0.0
2013	54.0	0.0	0.0	0.0
2014	54.0	0.0	0.0	0.0
2015	54.0	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Short term educational programs will be directed toward individuals, families, professionals and community leaders through

multiple methods -- classes, web-based programs, workshops, mass media to strengthen their knowledge and skills.

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

**Extension**

<b>Direct Methods</b>	<b>Indirect Methods</b>
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> <li>● Other 1 (Community Forums)</li> <li>● Other 2 (Webinars, Podcasts)</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> <li>● Other 1 (eXtension Communities of Interes)</li> </ul>

**3. Description of targeted audience**

Parents of young children, teens and young moms, low-income families, caregivers of children and adults, service providers, parenting educators, couples, athletes, coaches, health professionals, worksite employees, food service managers, food processors, policy makers, businesses, community citizens and leaders, home improvement contractors.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

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

	<b>Direct Contact Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>
<b>Year</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>
2011	80000	111000	20050	5000
2012	80000	111000	20050	5000
2013	80000	111000	20050	5000
2014	80000	111000	20050	5000
2015	80000	111000	20050	5000

**2. (Standard Research Target) Number of Patent Applications Submitted**

**2011:0                      2012:0                      2013:0                      2014:0                      2015:0**

**3. Expected Peer Review Publications**

<b>Year</b>	<b>Research Target</b>	<b>Extension Target</b>	<b>Total</b>
2011	12	15	27
2012	12	15	27

<b>Year</b>	<b>Research Target</b>	<b>Extension Target</b>	<b>Total</b>
2013	12	14	26
2014	12	14	26
2015	12	14	26

**V(H). State Defined Outputs****1. Output Target**

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

<b>2011:5000</b>	<b>2012:5000</b>	<b>2013:5000</b>	<b>2014:5000</b>	<b>2015:5000</b>
------------------	------------------	------------------	------------------	------------------
  
- Number of professionals involved in programs related to childcare, aging, couple relationships, parenting and housing programs.  

<b>2011:5000</b>	<b>2012:5000</b>	<b>2013:5000</b>	<b>2014:5000</b>	<b>2015:5000</b>
------------------	------------------	------------------	------------------	------------------
  
- Number of adults participating in programs on improving personal and family financial management skills.  

<b>2011:7500</b>	<b>2012:7500</b>	<b>2013:7500</b>	<b>2014:7500</b>	<b>2015:7500</b>
------------------	------------------	------------------	------------------	------------------
  
- Number of adults participating in programs on strengthening consumer decision making skills.  

<b>2011:2500</b>	<b>2012:2500</b>	<b>2013:2500</b>	<b>2014:2500</b>	<b>2015:2500</b>
------------------	------------------	------------------	------------------	------------------
  
- Number of participants in educational programs that increase awareness of public issues.  

<b>2011:1800</b>	<b>2012:1800</b>	<b>2013:1800</b>	<b>2014:1800</b>	<b>2015:1800</b>
------------------	------------------	------------------	------------------	------------------
  
- Number of community groups formed to address a public issue.  

<b>2011:9</b>	<b>2012:9</b>	<b>2013:8</b>	<b>2014:8</b>	<b>2015:8</b>
---------------	---------------	---------------	---------------	---------------
  
- Number of adults who participate in Extension programs on food, nutrition, and health.  

<b>2011:55000</b>	<b>2012:55000</b>	<b>2013:55000</b>	<b>2014:55000</b>	<b>2015:55000</b>
-------------------	-------------------	-------------------	-------------------	-------------------
  
- Number of adult participants in Extension programs on food safety.  

<b>2011:1000</b>	<b>2012:1000</b>	<b>2013:1000</b>	<b>2014:1000</b>	<b>2015:1000</b>
------------------	------------------	------------------	------------------	------------------
  
- Number of adult participants in Extension programs on food insecurity.  

<b>2011:300</b>	<b>2012:300</b>	<b>2013:300</b>	<b>2014:300</b>	<b>2015:300</b>
-----------------	-----------------	-----------------	-----------------	-----------------
  
- Number of youth participants in Extension programs on food, nutrition and health.  

<b>2011:5000</b>	<b>2012:5000</b>	<b>2013:5000</b>	<b>2014:5000</b>	<b>2015:5000</b>
------------------	------------------	------------------	------------------	------------------

**V(I). State Defined Outcome**

O. No.	Outcome Name
1	Number of parents improving parenting skills (child-parent communication and providing love and limits).
2	Number of professionals trained to assist families (certification programs).
3	Number of early child care programs improving learning environments and teaching strategies.
4	Number of participants better able to manage later life issues.
5	Number of individuals improving personal and family financial management skills.
6	Number of individuals strengthening consumer decision making skills.
7	Number of communities who report taking action to address public issues related to improving circumstances for children, youth and families at risk.
8	Number of adult participants who improve their diet.
9	Number of adult participants who increase their minutes of activity.
10	Number of communities that take steps to reduce food insecurity.
11	Number of participants certified in food safety programs.
12	Number of youth participants in Extension programs on food, nutrition and health.

**Outcome # 1**

**1. Outcome Target**

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

**2. Outcome Type : Change in Action Outcome Measure**

**2011:3500                      2012:3500                      2013:3500                      2014:3500                      2015:3500**

**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 professionals trained to assist families (certification programs).

**2. Outcome Type : Change in Action Outcome Measure**

**2011:120                      2012:120                      2013:120                      2014:120                      2015:120**

**3. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being
- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

**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**

**2011:1500                      2012:1500                      2013:1500                      2014:1500                      2015:1500**

**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**

**2011:500                      2012:500                      2013:500                      2014:500                      2015:500**

**3. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being
- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 5**

**1. Outcome Target**

Number of individuals improving personal and family financial management skills.

**2. Outcome Type : Change in Action Outcome Measure**

**2011:6000                      2012:6000                      2013:6000                      2014:6000                      2015:6000**

**3. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 6**

**1. Outcome Target**

Number of individuals strengthening consumer decision making skills.

**2. Outcome Type : Change in Action Outcome Measure**

**2011:1875                      2012:1875                      2013:1875                      2014:1875                      2015:1875**

**3. Associated Knowledge Area(s)**

- 607 - Consumer Economics

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 7**

**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 Knowledge Outcome Measure**

**2011:9                      2012:9                      2013:8                      2014:8                      2015:8**

**3. Associated Knowledge Area(s)**

- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 8**

**1. Outcome Target**

Number of adult participants who improve their diet.

**2. Outcome Type : Change in Action Outcome Measure**

**2011:35000                      2012:35000                      2013:35000                      2014:35000                      2015:35000**

**3. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 9**

**1. Outcome Target**

Number of adult participants who increase their minutes of activity.

**2. Outcome Type : Change in Action Outcome Measure**

**2011:20000                      2012:20000                      2013:20000                      2014:20000                      2015:20000**

**3. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 10**

**1. Outcome Target**

Number of communities that take steps to reduce food insecurity.

**2. Outcome Type : Change in Action Outcome Measure**

**2011:8                      2012:8                      2013:8                      2014:9                      2015:9**

**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 participants certified in food safety programs.

**2. Outcome Type : Change in Action Outcome Measure**

**2011:450                      2012:450                      2013:450                      2014:450                      2015:450**

**3. Associated Knowledge Area(s)**

- 504 - Home and Commercial Food Service
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 12**

**1. Outcome Target**

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

**2. Outcome Type : Change in Action Outcome Measure**

**2011:5000                      2012:5000                      2013:5000                      2014:5000                      2015:5000**

**3. Associated Knowledge Area(s)**

- 504 - Home and Commercial Food Service
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

**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.)

#### **Description**

Natural disasters such as flooding and tornadoes can affect programming implementation. The economy influences our work, for example, changes in funding from the national, state and local levels for Extension outreach (budget cuts) may alter outcomes. National or state programmatic changes in priorities may influence programming efforts and likewise the outcomes. Inability to gather outcome data from some audiences may be a factor.

## **V(K). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study

#### **Description**

- Participant attitudes, knowledge and behaviors will be assessed .
  - Strengthening Families Program for Parents and Youth 10-14 years pre-post test for parents and youth.
- Partnering with Parents/Family Development Certification Post-pretest for professionals
- Number of consumers assisted in developing remodeling plans to improve home accessibility.
  - Post training observational assessment for Early Childhood Environment rating scale training to measure impact of quality improvements.
  - Post Training survey of participants in caregiver training programs.

### **2. Data Collection Methods**

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Observation
- Tests

**Description**

{NO DATA ENTERED}

**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%	
	<b>Total</b>	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 elections 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
2011	25.0	0.0	11.0	0.0
2012	25.0	0.0	11.0	0.0
2013	25.0	0.0	11.0	0.0
2014	25.0	0.0	11.0	0.0
2015	25.0	0.0	11.0	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"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**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)**

**1. Standard output measures**

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	20000	200000	0	20000
2012	20000	200000	0	20000
2013	20000	200000	0	20000
2014	20000	200000	0	20000
2015	20000	200000	0	20000

**2. (Standard Research Target) Number of Patent Applications Submitted**

**2011:0                      2012:0                      2013:0                      2014:0                      2015:0**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2011	3	4	7
2012	3	4	7
2013	3	4	7
2014	3	4	7
2015	3	4	7

**V(H). State Defined Outputs**

**1. Output Target**

- Number of articles, publications, reports, plans.

**2011:70                      2012:70                      2013:70                      2014:70                      2015:70**

**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**

**2011:50                      2012:50                      2013:50                      2014:50                      2015:50**

**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**

**2011:40                      2012:40                      2013:40                      2014:40                      2015:40**

**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**

**2011:30                      2012:30                      2013:30                      2014:30                      2015:30**

**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**

**2011:180                      2012:180                      2013:180                      2014:180                      2015:180**

**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**

**2011:100                      2012:100                      2013:100                      2014:100                      2015:100**

**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**

**2011:1500                      2012:1500                      2013:1500                      2014:1500                      2015:1500**

**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 (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

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

#### **Description**

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.

### **2. Data Collection Methods**

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured

- Case Study
- Observation

**Description**

{NO DATA ENTERED}

## **V(A). Planned Program (Summary)**

### **Program # 4**

#### **1. Name of the Planned Program**

Helping Rural Iowans Prosper

#### **2. Brief summary about Planned Program**

About 40 percent of Iowa's population is considered rural, living on farms, in towns of less than 2,500, or in the country but not on farms. Rural populations pose a diverse set of challenges that relate to how to efficiently and effectively deliver services to them. Among the 839 towns with less than 2,500 population, the 300 plus school districts, 100 county governments, and the widely differing socioeconomic conditions in the state, there are major challenges in how to provide affordable, quality public services such as health care, education, sanitation, water, and other basic needs such as access to grocery stores. In addition to these chronic problems are the new challenges presented by the uncertain financial health of the general economy. The majority of rural people are either self-employed or work in small businesses. Others who live in rural places adjacent to large metro areas often commute long distance to work, and face the prospects of higher commuting costs or layoffs in the current recession. While much attention has focused on the problems of Wall Street, this project is directed towards the problems and opportunities of Main Street. Family-owned and operated businesses, whether in town or on farms, must have a stable economic environment in order to make sound business decisions. The volatility in commodity markets, financial markets, and energy stocks has created much uncertainty and economic hardship in rural Iowa. Take for example the biofuels industry, which enjoyed substantial profits when the price of crude oil was \$150.00 a barrel. Iowa farmers and agribusinesses responded by bringing several ethanol and soy diesel refineries on line to help meet national energy independence priorities. In less than a year crude oil prices have tumbled to less than \$40 per barrel and now several farmer/investor-owned biofuel plants are either in bankruptcy or teetering on closure. Less than a year ago, farmers were receiving near \$7.00 per bushel for corn, and \$13.00 for soybeans. With the contraction of global demand for US feed stocks, grain prices have declined by upwards of 50% in the last six months. Such erratic, unpredictable shifts make managing a farm or business very difficult.

Yet with the uncertainties come opportunities for rural Iowans to prosper by understanding their comparative advantages, interpreting local, regional and global trends, and taking appropriate individual and collective action to create a socio-economic place and situation that is more productive, diverse and resilient, in essence, creating a more "sustainable" rural Iowa.

**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

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
607	Consumer Economics	0%		18%	
608	Community Resource Planning and Development	20%		17%	
609	Economic Theory and Methods	0%		3%	
610	Domestic Policy Analysis	20%		18%	
801	Individual and Family Resource Management	0%		1%	
802	Human Development and Family Well-Being	0%		15%	
803	Sociological and Technological Change Affecting Individuals, Families and Communities	30%		11%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	0%		1%	
805	Community Institutions, Health, and Social Services	20%		16%	
806	Youth Development	10%		0%	
	<b>Total</b>	100%		100%	

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

Rural Iowa lacks certain human, social and capital resources to adequately respond to events and conditions that lie far beyond their reach and for which there are few to no data on the chances of occurrence. Whereas the vagaries of weather, disease outbreaks, and pests are part of the Midwestern culture, the emergence of a global economy has brought along a new order of complexities to both farming and Main Street. Global events such as economic or financial shocks cannot be controlled at the local level. Farmers and rural people need to understand and make plans to succeed in a more risky and uncertain economic climate. Risk and uncertainty assessment research needs to address how or what rural people can do to reduce their exposure to risk and uncertainty. For a stable economic climate to occur, small businesses and farms alike must be able to plan and execute decisions that provide goods and services that are desired, diverse and resilient. Likewise, rural institutions such as churches, hospitals, libraries, local units of government need to have the mechanisms or resources to deal with rapid changes. Whereas there is growing interest in sustainability, most of the focus has been on sustaining our natural resources. We need to broaden the scope of sustainability initiatives to include sustainable social systems 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**

Our economy is increasingly more regional and global, and the trends toward globalization will likely continue. Galbraith's book, *Age of Uncertainty*, and Freidman's book, *The World is Flat*, both warned of potential downsides of globalization. These include the financial and organizational restructuring that accompany global economic integration. The challenge is to increase the sustainability -- the productivity, diversity and resiliency -- of socio-economic systems in an age of recurring international shock waves.

In *Caught in the Middle: America's Heartland in the Age of Globalism*, Longworth recently examined many of the effects that global economic integration has had on Midwestern communities. Longworth's thesis also opens the door to regional collaboration and marketing that identifies comparative advantages for rural Iowa (and middle USA) and focuses on "branding" goods and services that can best be produced locally but for the world markets.

**2. Ultimate goal(s) of this Program**

The goal of the Helping Rural Iowans Prosper program will be to address the crisis of confidence and engender creativity and socio-economic sustainability through education and collective action. It is based upon a set of public policy educational activities that will help communities to identify and understand the regional and global, conditions and trends that are exerting powerful influences on their local social and economic assets and conditions. This program will hold a series of policy seminars and educational events to outline the major features of regionalization and globalization, examine the associated benefits and risks, and share information about how communities can cope, adapt and thrive through collective action that increases socio-economic productivity, diversity and resiliency.

This program will explore ways that families and communities can insulate themselves and advantage themselves from the broad shock waves that create economic uncertainty. By helping communities to understand the structural and economic forces that regionalization and globalization engenders, it will facilitate planning processes that lead to more sustainable lifestyles and comprehensive approaches to family and community well-being. The program will contribute to the broad goals of community and social sustainability. Some of the greatest virtues of rural America are the products of collective action, where people assembled and decided what they wanted in their local communities and set about to get it done. What is lacking in many communities is sufficient leadership to facilitate appropriate individual and collective actions. The Helping Rural Iowans Prosper program will attempt to assist communities to regain some control over their economies and make planning decisions that increase their economic and social productivity, diversity and resiliency.

**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
2011	4.5	0.0	5.0	0.0
2012	4.5	0.0	5.0	0.0
2013	4.5	0.0	5.0	0.0
2014	4.5	0.0	5.0	0.0
2015	4.5	0.0	5.0	0.0

**V(F). Planned Program (Activity)****1. Activity for the Program**

Public Policy Educational Forums:

A key activity of this program is a set of public policy programs that will bring together leading researchers and extension educators to discuss the twin forces of globalization and sustainability. This will provide a strong integrated research and

extension framework to address the means to help rural lowans prosper.

This program will address the following research and extension questions concerning globalization and regionalization:

1. What is globalization and regionalization?
2. What the key concepts of regional and global markets?
3. What are the short run and long run benefits and costs of globalization and regionalization?
4. What the risks and uncertainties and opportunities associated with globalization and regionalization to rural communities, businesses and families?

The program will also provide understanding of what is meant by sustainable communities in addressing the following questions:

1. What is a sustainable community?
2. What are the major features of sustainability?
3. What can businesses, individuals and communities do to increase sustainability vis-à-vis regionalism and in view of globalization?
4. What successful models of sustainable socio-economic development exist?
5. What are the appropriate collective actions that when applied to rural Iowa would ensure a more sustainable socio-economic situation?

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

**3. Description of targeted audience**

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

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

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	1500	15000	100	0

	<b>Direct Contact Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>
<b>Year</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>
2012	2000	15000	100	0
2013	2500	15000	100	0
2014	3000	15000	100	0
2015	3000	15000	100	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**2011:0                      2012:0                      2013:0                      2014:0                      2015:0**

**3. Expected Peer Review Publications**

<b>Year</b>	<b>Research Target</b>	<b>Extension Target</b>	<b>Total</b>
2011	0	0	10
2012	0	0	10
2013	0	0	10
2014	0	0	10
2015	0	0	10

**V(H). State Defined Outputs**

**1. Output Target**

- Number of local leaders and citizens who attend face-to-face educational activities, including individual consultations.

**2011:2000                      2012:2500                      2013:3000                      2014:3500                      2015:3500**

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

**2011:15000                      2012:15000                      2013:15000                      2014:15000                      2015:15000**

- Number of community-based programs provided.

**2011:100                      2012:100                      2013:100                      2014:100                      2015:100**

- Number of local leaders and citizens who attend programs related to preserving the rural landscape through agrotourism.

**2011:75                      2012:75                      2013:75                      2014:75                      2015:75**

**V(I). State Defined Outcome**

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

**Outcome # 1**

**1. Outcome Target**

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

**2. Outcome Type : Change in Knowledge Outcome Measure**

**2011:500                      2012:500                      2013:500                      2014:500                      2015:500**

**3. Associated Knowledge Area(s)**

- 607 - Consumer Economics
- 608 - Community Resource Planning and Development
- 610 - Domestic Policy Analysis
- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures
- 805 - Community Institutions, Health, and Social Services

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 2**

**1. Outcome Target**

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

**2. Outcome Type : Change in Knowledge Outcome Measure**

**2011:200                      2012:200                      2013:200                      2014:200                      2015:200**

**3. Associated Knowledge Area(s)**

- 607 - Consumer Economics
- 608 - Community Resource Planning and Development
- 610 - Domestic Policy Analysis
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures
- 805 - Community Institutions, Health, and Social Services
- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 3**

**1. Outcome Target**

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

**2. Outcome Type : Change in Knowledge Outcome Measure**

**2011:500                      2012:500                      2013:500                      2014:500                      2015:500**

**3. Associated Knowledge Area(s)**

- 608 - Community Resource Planning and Development
- 610 - Domestic Policy Analysis
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 805 - Community Institutions, Health, and Social Services

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 4**

**1. Outcome Target**

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

**2. Outcome Type : Change in Action Outcome Measure**

**2011:100                      2012:100                      2013:100                      2014:100                      2015:100**

**3. Associated Knowledge Area(s)**

- 607 - Consumer Economics
- 608 - Community Resource Planning and Development
- 609 - Economic Theory and Methods
- 610 - Domestic Policy Analysis
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures
- 805 - Community Institutions, Health, and Social Services
- 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**

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

##### **Description**

Program leaders make every attempt to respond to changing needs. Recently these have included such events as the volatility in commodity markets, financial markets, and energy stocks, which has created uncertainty and economic hardship in rural Iowa.

#### **V(K). Planned Program (Evaluation Studies and Data Collection)**

##### **1. Evaluation Studies Planned**

##### **Description**

{NO DATA ENTERED}

##### **2. Data Collection Methods**

##### **Description**

{NO DATA ENTERED}



## **V(A). Planned Program (Summary)**

### **Program # 5**

#### **1. Name of the Planned Program**

Food Security, Human Nutrition, and Food Safety

#### **2. Brief summary about Planned Program**

The Iowa Agricultural and Home Economics Experiment Station and Iowa State University Cooperative Extension have provided strong leadership in facilitating interdisciplinary work to protect and promote the health of Iowans and beyond. This is evidenced by participation of over 120 ISU faculty members from six colleges and 22 academic departments working in interdisciplinary teams and centers to create and transfer knowledge on nutrients and bioactive components in food, factors related to food security (availability), factors related to nutritional well being, and prevention and control of foodborne diseases. In addition, governmental laboratories (USDA, Ames Laboratory) provide important collaborative research support in the form of funding, personnel and facilities. These ties will be expected to continue, expand and strengthen. Collaboration with industry partners to mitigate the risks of food safety incidents and to develop functional and improved nutritional characteristics of foods and ingredients are an important driver of food and nutrition related research. The proposed plan of work will conduct programs on interrelated aspects of food from farm to fork building on the work of this existing network of scientists and communicators with strengths in plant and animal sciences, toxicology, food science, animal and human nutrition, veterinary medicine, engineering, economics, and business. This will enhance Iowa's role as a reliable producer and supplier of high quality, safe and nutritious food and food products and will aid in ensuring Iowa's economic future.

**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

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
501	New and Improved Food Processing Technologies	14%		19%	19%
502	New and Improved Food Products	3%		6%	6%
503	Quality Maintenance in Storing and Marketing Food Products	8%		10%	10%
504	Home and Commercial Food Service	9%		0%	0%
604	Marketing and Distribution Practices	16%		4%	4%
607	Consumer Economics	8%		0%	0%
701	Nutrient Composition of Food	3%		0%	0%
702	Requirements and Function of Nutrients and Other Food Components	0%		21%	21%
703	Nutrition Education and Behavior	9%		4%	4%
704	Nutrition and Hunger in the Population	0%		1%	1%
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources.	0%		1%	1%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	8%		16%	16%
721	Insects and Other Pests Affecting Humans	0%		2%	2%
722	Zoonotic Diseases and Parasites Affecting Humans	0%		3%	3%
723	Hazards to Human Health and Safety	14%		3%	3%
724	Healthy Lifestyle	8%		10%	10%
	<b>Total</b>	100%		100%	100%

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

The demographics of Iowa include a high percentage of elderly, single parent families, recent immigrants and other underserved or at risk consumers living in rural communities. Iowans, as is the rest of the nation, are practicing behaviors that lead to a high risk of obesity and related morbidities, diabetes, and food borne illnesses. The Centers for Disease Control (CDC) estimates only 56% of adults are doing regular moderate exercise and that over 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths occur in the U.S. each year due to foodborne pathogens. The USDA projects the resulting economic burden of obesity is \$117 Billion/year and is more than \$7billion/year for 5 food-related pathogenic bacteria associated with only 5% of the 76 million illnesses. These figures indicate the magnitude of nutrition and food safety issues that concern not only human health, but all aspects of our inter-related agro-economy- farming, retail; transportation, etc., and all inter-related industries and businesses. Because of the economic and social costs of these two areas, they are priorities.

A growing number of Iowa's small family farmers are turning to alternative agriculture ventures and differentiated markets to diversify their enterprises, stabilize their returns, and boost their level of stewardship. These producers are taking advantage of expanding consumer demand for healthier food and more transparent supply chains, along with increased consumer desire to support local businesses and re-connect with agricultural roots. Such producers may be using non-conventional production systems to access niche markets, direct-marketing their farm products locally, earning organic or other third-party certifications, or adding value to farm products to market artisanal goods.

## 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

Humans will continue to practice food and wellness related behaviors that place them at risk because of excess or insufficient nutrient intake and unsafe food handling practices throughout the farm to fork continuum.

Food safety risks will continue to be present regardless of the source of the food with globalization intensifying the potential for world wide outbreaks, intentional contamination, and new pathogens. It is assumed that the global climate change will further exacerbate the situation. Contamination of foods by biological, chemical, and/or physical hazards throughout the food continuum will be present regardless of the agronomic or animal management practices used to produce foods. New and improved methods to assess and control these new or established hazards will be required.

Obesity and associated morbidities will continue to affect all stages of the life cycle. Because of the high health care costs associated with these two areas, it is assumed that funding for food safety, nutrition and wellness research and outreach will expand. Areas that will continue to grow include basic and applied knowledge of detection of pathogens and rapid intervention, food- and ingredient-based nutrients that have an impact on health and well being; identification and characterization of bioactive components of foods, plants, and animals that have an effect on health; examination of pre- and pro-biotics on gut health, immunological response, and overall health.

#### 2. Ultimate goal(s) of this Program

The ultimate goal is to create and transfer knowledge through an interdisciplinary and systems approach (from farm to fork) to improve health and well being in Iowa, the United States, and throughout the world. We envision that Iowa State University will be a place where industry leaders, policy makers, and the public will come together for solutions to local and global health, wellness, and food safety and defense problems as or even before they arise.

### 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
2011	7.0	0.0	20.0	0.0
2012	7.0	0.0	20.0	0.0
2013	7.0	0.0	15.3	20.0
2014	7.0	0.0	20.0	0.0
2015	7.0	0.0	20.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

The activities will consist of conducting research in areas where knowledge gaps exist. For example, the causes of 60 million foodborne illnesses are not attributable to a known pathogen. High priority, therefore, will be placed on conducting research in this area to identify causal pathogens. Rapid detection of pathogens combined with an information network to trace the problem to the source is critical for timely intervention. Ensuring the health of Iowa's food animals will be an important activity. For example, designing a web-based information system for livestock health can provide an electronic certificate system for animal health that can provide forward and backward traceability of animal infections. Research efforts will be directed toward identification of the biomolecular roles for nutrients in normal and abnormal human metabolism and the impact of production and processing methods on nutrient composition of foods. Dissemination of these research findings as new or continuing extension programming will provide a means for individuals, industry and communities to learn and change. The extension programs will be focused on providing the farm to fork continuum with practical and timely training and recommendations on how to manage the risks with emphasis on prevention and preparedness. ISU would use the tools of comprehensive websites (an example is [www.iowafoodsafety.org](http://www.iowafoodsafety.org)), workshops, seminars, and newsletters that are directed toward specific target audiences for the purposes of education, information sharing and networking throughout the farm to fork chain. Maintaining an open dialogue with food professionals in the private food industry will help to focus and emphasize which wellness, nutrition, and food safety issues should be current priorities. From the industry perspective, the main protector of our food supply is not regulatory authorities but the food industry itself. They take this responsibility very seriously. Iowa State University conducted a listening summit that was attended by more than 50 Iowa food industry leaders, representing companies from various sectors of the food supply chain. The industry leaders identified weak links in our food supply where research needs exist. These areas are: 1) less-than-load (LTL) trucking 2) governmental regulations, and 3) consumer perceptions. Food professionals throughout the farm to fork continuum have availed themselves of training opportunities provided by ISU Extension, which have included topics such as Good Agricultural Practices for local producers, HACCP training for food and animal products processors and food services, ServSafe® for retail food, and extensive consumer education. For both research and extension activities, active collaboration with international partners such as the FAO (Food and Agricultural Organization), the CODEX Alimentarius Commission, and the OIE (the world organization for animal health) will be pursued since food safety is a global issue and these are the standard setting organizations for protecting consumer health and ensuring fair trade practices in the global food trade.

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

**Extension**

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

**3. Description of targeted audience**

Our target audiences are farmers, processors, retail food service, food industry professionals and suppliers and consumers.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

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

	<b>Direct Contact Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>
<b>Year</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	1000	2000	0	0
2012	1500	3000	0	0
2013	2000	4000	0	0
2014	2500	5000	0	0
2015	2500	5000	0	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**2011:0                      2012:0                      2013:0                      2014:0                      2015:0**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2011	10	1	0
2012	10	1	0
2013	10	1	0
2014	10	1	0
2015	10	1	0

**V(H). State Defined Outputs**

**1. Output Target**

- Number of consumers and producers attending workshops on trends and opportunities related to local and regional food systems.

**2011:1000                      2012:1500                      2013:2000                      2014:2500                      2015:2500**

- Number of consultations with small farmers to match their strengths, weaknesses, and personal situations with particular local food enterprises and markets.

**2011:100                      2012:100                      2013:100                      2014:100                      2015:100**

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

**2011:1000                      2012:1000                      2013:1000                      2014:1000                      2015:1000**

**V(I). State Defined Outcome**

O. No.	Outcome Name
1	Number of small farmers who understand how to participate in local and regional food markets and how to establish new food production enterprises in their farm businesses.
2	Number of producers who integrate local food production into their businesses and grow that enterprise.
3	Number of consumers who learn how to make informed choices regarding the opportunities offered by local and regional food systems.
4	Number of individuals certified to implement Hazard Analysis and Critical Control Point (HACCP) in meat, poultry, and egg production plants.

**Outcome # 1**

**1. Outcome Target**

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

**2. Outcome Type : Change in Knowledge Outcome Measure**

**2011:200                      2012:300                      2013:400                      2014:500                      2015:500**

**3. Associated Knowledge Area(s)**

- 503 - Quality Maintenance in Storing and Marketing Food Products
- 504 - Home and Commercial Food Service
- 604 - Marketing and Distribution Practices
- 703 - Nutrition Education and Behavior
- 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
- 724 - Healthy Lifestyle

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 2**

**1. Outcome Target**

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

**2. Outcome Type : Change in Action Outcome Measure**

**2011:100                      2012:150                      2013:200                      2014:250                      2015:250**

**3. Associated Knowledge Area(s)**

- 501 - New and Improved Food Processing Technologies
- 502 - New and Improved Food Products
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 504 - Home and Commercial Food Service
- 604 - Marketing and Distribution Practices
- 607 - Consumer Economics
- 701 - Nutrient Composition of Food
- 703 - Nutrition Education and Behavior
- 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

**Outcome # 3**

**1. Outcome Target**

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

**2. Outcome Type : Change in Knowledge Outcome Measure**

**2011:1000                      2012:1000                      2013:1000                      2014:1000                      2015:1000**

**3. Associated Knowledge Area(s)**

- 607 - Consumer Economics
- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 723 - Hazards to Human Health and Safety
- 724 - Healthy Lifestyle

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 4**

**1. Outcome Target**

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

**2. Outcome Type : Change in Knowledge Outcome Measure**

**2011:60                              2012:60                              2013:60                              2014:60                              2015:60**

**3. Associated Knowledge Area(s)**

- 501 - New and Improved Food Processing Technologies
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 504 - Home and Commercial Food Service
- 604 - Marketing and Distribution Practices
- 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

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

##### Description

Funding opportunities from federal, state, and industry sources are dynamic. This often leads to rapid reallocation of research effort and challenges to maintaining a long term research agenda. In addition, funding agencies are requiring multidisciplinary approaches. Institutional mechanisms have developed to incorporate flexibility into research programs to allow rapid responses to these new environments. Roles for food in health are continually evolving. This complex interaction results in a need for deliberative well designed research programs and dissemination tools. The demographics of the state of Iowa are changing with new immigrants from Central and South America, the Balkans, and other areas moving to the state. The resources to address the cultural needs of this diverse population will need to be funded and developed. Mitigating the potential and the fallout for human caused disasters, federal and state regulatory agencies have placed new guidelines and directives that will need to be addressed by the food and agriculture production communities.

An additional external factor is the potential reorganization of the food safety agencies at the federal level into a single agency. There is inadequate funding for food safety work at the present time and expectations have been buoyed up that more competitive funding will be made available with the reorganization and the recognition that food safety is a human health, national security and a major economic issue.

### V(K). Planned Program (Evaluation Studies and Data Collection)

#### 1. Evaluation Studies Planned

##### Description

{NO DATA ENTERED}

#### 2. Data Collection Methods

##### Description

{NO DATA ENTERED}

## **V(A). Planned Program (Summary)**

### **Program # 6**

#### **1. Name of the Planned Program**

Ensuring Profitable Producers

#### **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. Farmers and agribusinesses make these choices within a framework of policies and regulations meant to shape the desired outcome for society in general, but that often produce unintended consequences for both agriculture and society. Thus, to ensure profitable producers 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, model policy outcomes and anticipate new opportunities and challenges facing Iowa agriculture.

Because this planned program covers more than 20 knowledge areas, each knowledge area listed may represent additional areas as indicated:

102, 201, 202, 203, 204, 205 (206), 212, 216 (211, 213, 215), 301 (302) 303, 304, 305, 306 (307, 308), 311 (312, 313, 314, 315), 401, 403, 405, 601, 602, 603 (606, 611).

**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 and Biodiversity	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%	
	<b>Total</b>	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 \$19.7 billion in 2007. Iowa leads the nation in the production of corn, soybeans, hogs and eggs 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. Farm level production and sales are only a part of Iowa's agriculture sector. A 2005 report indicated that approximately 25 percent of Iowa's total output goes into agri-food sector exports (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). 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. 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 of agricultural production, marketing and agribusiness for employment and economic activity. Livestock and poultry production has 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 in crop and livestock production efficiency 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 a 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 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
2011	69.0	0.0	50.0	0.0
2012	69.0	0.0	50.0	0.0
2013	69.0	0.0	50.0	0.0
2014	69.0	0.0	50.0	0.0
2015	69.0	0.0	50.0	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 Iowa agriculture. Maintain and strengthen extension education programs targeted to 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"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● Web sites</li> <li>● Other 1 (radio)</li> </ul>

**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)**

**1. Standard output measures**

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	100000	500000	5000	2500
2012	100000	500000	5000	2500
2013	100000	500000	5000	2500

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2014	100000	500000	5000	2500
2015	100000	500000	5000	2500

**2. (Standard Research Target) Number of Patent Applications Submitted**

**2011:5                      2012:5                      2013:5                      2014:5                      2015:5**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2011	75	2	0
2012	75	2	0
2013	75	2	0
2014	75	2	0
2015	75	2	0

**V(H). State Defined Outputs**

**1. Output Target**

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

**2011:100000              2012:100000              2013:100000              2014:100000              2015:100000**

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

**2011:500000              2012:500000              2013:500000              2014:500000              2015:500000**

**V(I). State Defined Outcome**

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

**Outcome # 1**

**1. Outcome Target**

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

**2. Outcome Type : Change in Action Outcome Measure**

**2011:10000                      2012:10000                      2013:10000                      2014:10000                      2015:10000**

**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 established.

**2. Outcome Type : Change in Action Outcome Measure**

**2011:35                              2012:35                              2013:35                              2014:35                              2015:35**

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



**2. Outcome Type** : Change in Action Outcome Measure

**2011:7500**                      **2012:7500**                      **2013:7500**                      **2014:7500**                      **2015:7500**

**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 Action Outcome Measure

**2011:500**                      **2012:500**                      **2013:500**                      **2014:500**                      **2015:500**

**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

**2011:3000**                      **2012:3000**                      **2013:3000**                      **2014:3000**                      **2015:3000**

**3. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources and Biodiversity

- 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 attending crop production and protection programming that focuses on improving agronomic practices.

##### 2. Outcome Type : Change in Action Outcome Measure

2011:20000      2012:20000      2013:20000      2014:20000      2015:20000

##### 3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources and Biodiversity
- 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 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 impact production and prices and thus short-term profitability. These include natural disasters (drought, flood, frost, etc), market forces that impact 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 impacted by 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 (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

#### **Description**

{NO DATA ENTERED}

### **2. Data Collection Methods**

#### **Description**

{NO DATA ENTERED}

## **V(A). Planned Program (Summary)**

### **Program # 7**

#### **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

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
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%	
	<b>Total</b>	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 (NH<sub>3</sub>, NO<sub>x</sub>, N<sub>2</sub>O), 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
2011	13.5	0.0	23.0	0.0
2012	13.5	0.0	23.0	0.0
2013	13.5	0.0	23.0	0.0
2014	13.5	0.0	23.0	0.0
2015	13.5	0.0	23.0	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"> <li>• Education Class</li> <li>• Workshop</li> <li>• Group Discussion</li> <li>• One-on-One Intervention</li> <li>• Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>• Public Service Announcement</li> <li>• Newsletters</li> <li>• Web sites</li> <li>• Other 1 (radio)</li> </ul>

## 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)

### 1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	20000	100000	1000	0
2012	20000	100000	1000	0
2013	20000	100000	1000	0
2014	20000	100000	1000	0
2015	20000	100000	1000	0

### 2. (Standard Research Target) Number of Patent Applications Submitted



**2011:0**

**2012:0**

**2013:0**

**2014:0**

**2015:0**

**3. Expected Peer Review Publications**

<b>Year</b>	<b>Research Target</b>	<b>Extension Target</b>	<b>Total</b>
2011	10	2	0
2012	10	2	0
2013	10	2	0
2014	10	2	0
2015	10	2	0

**V(H). State Defined Outputs**

**1. Output Target**

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

**2011:20000**

**2012:20000**

**2013:20000**

**2014:20000**

**2015:20000**

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

**2011:100000**

**2012:100000**

**2013:100000**

**2014:100000**

**2015:100000**

**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 lowans that participate in programming directly focused on the adoption of practices that protect natural resources including woodlands, wildlife, energy, and community resources.
3	Number of producers and service providers who participate in programs designed to increase the adoption of conservation systems on Iowa's crop acreage.
4	Number of producers increasing the efficiency of manure and crop nutrient utilization while minimizing surface run off and preserving ground water quality.
5	Number of Iowa citizens who participate in learning activities that focus on improving water quality and quantity.

**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 Action Outcome Measure****2011:600****2012:600****2013:600****2014:600****2015:600****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 lowans that participate in programming directly focused on the adoption of practices that protect natural resources including woodlands, wildlife, energy, and community resources.

**2. Outcome Type : Change in Action Outcome Measure****2011:15000****2012:15000****2013:15000****2014:15000****2015:15000****3. Associated Knowledge Area(s)**

- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 131 - Alternative Uses of Land
- 133 - Pollution Prevention and Mitigation
- 134 - Outdoor Recreation
- 135 - Aquatic and Terrestrial Wildlife
- 136 - Conservation of Biological Diversity
- 605 - Natural Resource and Environmental Economics
- 608 - Community Resource Planning and Development

**4. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**Outcome # 3**

**1. Outcome Target**

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

**2. Outcome Type : Change in Action Outcome Measure**

**2011:10000                      2012:10000                      2013:10000                      2014:10000                      2015:10000**

**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 # 4**

**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**

**2011:8000                      2012:8000                      2013:8000                      2014:8000                      2015:8000**

**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 # 5**

**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**

**2011:200                      2012:200                      2013:200                      2014:200                      2015:200**

**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 (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

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

- During (during program)
- Time series (multiple points before and after program)
- Case Study

**Description**

{NO DATA ENTERED}

**2. Data Collection Methods**

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Observation
- Tests

**Description**

{NO DATA ENTERED}

## **V(A). Planned Program (Summary)**

### **Program # 8**

#### **1. Name of the Planned Program**

Sustainable Energy

#### **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

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
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%	
	<b>Total</b>	100%		100%	

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

The corn grain-based ethanol plants and soybean-based biodiesel plants are under temporary but severe economic pressures due to falling petroleum and ethanol prices and relatively high grain prices. This situation will undoubtedly change as global economies improve and demand for energy returns. We must use this opportunity to develop improved plant materials as biorefinery feedstocks; produce these feedstocks in sustainable ways to ensure future productivity and mitigate environmental affects; develop new harvesting, storing and transporting systems these new alternative feedstocks; develop new conversion processes that are more efficient, use less energy and water, and produce value-added co-products; and determine environmental, social, economic and policy impact of biorenewables, biofuels and biobased products.

**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
2011	7.0	0.0	7.0	0.0
2012	7.0	0.0	7.0	0.0
2013	7.0	0.0	7.0	0.0
2014	7.0	0.0	7.0	0.0
2015	7.0	0.0	7.0	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**

<b>Direct Methods</b>	<b>Indirect Methods</b>
-----------------------	-------------------------

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

### 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)

##### 1. Standard output measures

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

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2011	7500	15000	0	0
2012	10000	20000	0	0
2013	12500	25000	0	0
2014	15000	30000	0	0
2015	15000	30000	0	0

##### 2. (Standard Research Target) Number of Patent Applications Submitted

2011:0                      2012:0                      2013:0                      2014:0                      2015:0

##### 3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2011	5	2	0
2012	5	2	0
2013	5	2	0
2014	5	2	0
2015	5	2	0

## V(H). State Defined Outputs

### 1. Output Target

- Biorenewable companies and agricultural producers attending on-site educational activities: workshops, conferences, industry roundtable discussions, field events, and professional development.

**2011:5000                      2012:7500                      2013:10000                      2014:12500                      2015:12500**

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

**2011:1000                      2012:1500                      2013:2000                      2014:2500                      2015:2500**

- Number of individuals interested in biorenewables who subscribe to newsletters and access web-based resources.

**2011:1000                      2012:1500                      2013:2000                      2014:2500                      2015:2500**

**V(I). State Defined Outcome**

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

**Outcome # 1****1. Outcome Target**

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

**2. Outcome Type : Change in Action Outcome Measure**

**2011:400**                      **2012:400**                      **2013:400**                      **2014:400**                      **2015:400**

**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 gain.

**2. Outcome Type : Change in Action Outcome Measure**

**2011:7500**                      **2012:7500**                      **2013:7500**                      **2014:7500**                      **2015:7500**

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

**2. Outcome Type : Change in Knowledge Outcome Measure**

**2011:1000**                      **2012:1500**                      **2013:2000**                      **2014:2500**                      **2015:2500**

**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 representing biorenewable companies who learn new technologies related to biomass processing/refining.

**2. Outcome Type : Change in Knowledge Outcome Measure**

**2011:1500                      2012:2000                      2013:2500                      2014:3000                      2015:3000**

**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

**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 (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

**Description**

{NO DATA ENTERED}

**2. Data Collection Methods**

**Description**

{NO DATA ENTERED}