

2007 University of Nebraska Combined Research and Extension Plan of Work

I. Plan Overview

1. Brief Summary about Plan Of Work

Since 1988, the University of Nebraska--Lincoln Institute of Agriculture and Natural Resources (IANR) has followed a carefully developed and regularly revised strategic plan that sets the institute's direction based upon clientele needs and concerns. The 2000-2008 Strategic Plan reflects the changes in Nebraska's agriculture, agribusiness, natural resources and human resources occurring at a pace unthinkable only a few years ago. The plan provides the direction for IANR action plans that focus on the priority needs of Nebraskans related to food, agriculture, natural resources, environment, agribusiness, human resources and communities. As needs change, IANR will reassess and update the strategic plan's priorities to meet those needs.

To determine current priority programs and operational needs, IANR solicited input at 25 listening sessions held at 19 statewide sites. More than 700 stakeholders, students, faculty and staff contributed their views. They provided vital input to this updated 2000-2008 IANR Strategic Plan. The plan is reassessed annually to help re-focus efforts on the highest priority areas.

Based upon the institute's history and mission, IANR has three high-priority, overarching objectives: student programs, extended education and program balance. With these objectives at its core, the strategic plan's program themes include:

Sustainable and economically viable food and biomass systems;

A quality environment and effective natural resource management;

Viable communities and appropriate quality of life for individuals and families.

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

Year	Extension		Research	
	1862	1890	1862	1890
2007	212.0	0.0	131.0	0.0
2008	212.0	0.0	131.0	0.0
2009	212.0	0.0	131.0	0.0
2010	212.0	0.0	131.0	0.0
2011	212.0	0.0	131.0	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
- Combined External and Internal University Panel
- Combined External and Internal University External Non-University Panel

2. Brief Explanation

The planned programs included in this program of work reflect major focus areas identified in the IANR Strategic Plan. These focus areas reflect our citizens' concerns and needs as voiced by stakeholders, faculty and administrators. Various levels in the university have reviewed, approved and supported this plan.

The extension teams and work groups within each action plan will update their plans annually using stakeholder input and evaluation results from delivered programs. Also, every faculty member with a research appointment in the Agricultural Research Division (ARD) must have a current approved peer-reviewed project that defines his or her area of research investigation. The peer review process is consistent with the Hatch Act requirements as amended for agricultural experiment station projects and is required for all projects, whether classified as Hatch, State, or Multi-state. After internal departmental review, a peer review panel

meets with the principal investigators (PIs), unit administrators, and ARD representative. Following review and acceptable revision, if necessary, the project outline is forwarded to USDA-CSREES for inclusion in the CRIS database.

Another review process, which combines merit and peer review, is the annual review by state commodity check-off boards of more than 100 research and extension funding proposals from extension and ARD faculty. Proposals selected for funding address the most significant problems currently facing the producer members of these boards and clearly communicate the research's relevance to user needs. This review process provides additional valuable input to the extension and ARD planning efforts. Department and Research/Extension Center comprehensive six-year reviews provide another information source to ensure program quality and relevance. Teams comprised of three to six external panel members and approximately two internal panel members from other departments conduct these reviews, which ensure that the programs provided focus on Nebraskans' most pressing needs.

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?

Input from more than 80 entities involved in an action team plan review and the more than 700 people participating in IANR listening sessions confirm that we are addressing the critical issues that affect Nebraskans. A continuous listening process for planning efforts ensures that the plan of work is reviewed and updated regularly. The accuracy of the action plans is verified using the following methods:

Teams meet face to face at least twice annually.

Many action teams use monthly phone conference calls to stay on track.

Action team leaders talk with subject-matter department administrators annually to ensure that the action team's goals are congruent with university department research and extension goals.

Action teams meet with their stakeholders.

Action teams refine programs to be delivered to ensure that content goals support needs identified by stakeholders and demographic trends.

ARD faculty currently participating in multi-state projects receive research funding through the multi-state research component of the federal formula funds. These projects are selected and approved by regional director associations because they are high priority needs identified for multi-state activity.

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

Below are program examples initiated by stakeholder input that address the needs of under-served and under-represented populations.

University of Nebraska—Lincoln Extension has built a strong partnership with Little Priest Tribal College and Nebraska Indian Community College. Through this partnership, Hispanic teens have become more involved in outside activities and interact with other youth and adults outside their schools. Program leaders say teens are more motivated and more interested in learning about activities.

A Dawson County Extension assistant worked with Hispanic youth as a target effort to increase Hispanic youth participation. The group goals included developing leadership skills, providing activities in which Hispanic teens would participate and helping to become more involved in the community.

The Preventive Health and Wellness Education action team efforts exemplify the work being done to help under-served and under-represented populations. Through input from Department of Health and Human Services case managers for welfare-to-work families, the team implemented a program in 1999 to educate welfare-to-work families, primarily single mothers. This welfare-to-work program, called Building Nebraska Families (BNF), works one-on-one with the most difficult families moving off the welfare roles. Eleven FTE of extension educators have been hired through a contract with the Nebraska Department of Health and Human Services. Mathematica is studying BNF as a way to address the needs of welfare-to-work families effectively, and the organization has requested we continue this study through 2007, ensuring long-term data. Program graduates say that, thanks to the program, they feel better about themselves, they have improved their time management and problem-solving skills, and they have been able to increase their incomes.

Four colleges and universities (including UNL Extension) and seven public school districts joined forces to increase the number of minority, bilingual and English-as-a-Second-Language (ESL) endorsed teachers in northeast Nebraska using collaboration and a distance-delivered undergraduate degree program.

ARD research programs related to human nutrition and healthy lifestyles were highlighted under the federal goals and key themes. The research results feed science-based information directly into UNL Extension programs that target under-served and under-represented populations. For example, nutritional sciences research includes a project on evaluating the nutritional

characteristics of American bison meat. This complements the growth, production and use of American bison as a healthful meat source and the raising of bison herds on Nebraska's Native American reservations. Another research project on assessing managerial and work force development in food service management is providing information useful for effective training of low income and minority populations working in food service.

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

We believe that planned programs address the expected outcomes. Plan of work goals identified include output and outcome indicators as well as proposed impacts that will be used as planning tools. The action teams will collect impact data based upon the indicators identified. Some teams are collecting these data through their web sites. The teams are increasing their ability to use technology and teaching tools through learning web sites that are available around the clock; e.g., <http://lancaster.unl.edu/food> and <http://beef.unl.edu>. They are also using Polycoms, WebEx and Breeze as teaching media.

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

Documentation of program impacts reinforce UNL Extension and Agricultural Research program effectiveness. We have included several impact reports with this document to substantiate the difference that extension and research programs are making. The increasing number of multi-action team, multi-department and multi-state educational programs being delivered in multiple sites using multiple media reflect increased efficiencies. The aggressive efforts of faculty to use electronic media to deliver educational programs helps achieve this efficiency but, more important, allows program clientele to participate in programming on their own time and at their own location. An output of the newly focused education concept is in the increase in relationships with departments and colleges external to traditional extension partners; e.g., College of Architecture, College of Fine and Performing Arts, Admissions, Journalism and Computer Science.

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 individuals
- Survey of the general public

Brief explanation.

The University of Nebraska–Lincoln Extension and Agricultural Research Division routinely collaborate to plan and develop programs. These divisions, as part of the Institute of Agriculture and Natural Resources, have worked together to develop integrated strategic plans for more than 10 years. Several stakeholder input processes conducted by UNL Extension impact ARD planning. The six UNL Extension action plan teams seek program input from a minimum of five key stakeholders annually (determined to represent a significant population or organization or to be a key political leader). Teams obtain this stakeholder input in a variety of ways including face-to-face meetings and telephone or written surveys. In addition, a number of advisory committees associated with University of Nebraska academic departments and research and extension centers provide excellent input to both our extension programming and the Agricultural Research Division's research projects. When meeting with stakeholders, action teams seek to answer the following questions:

Are the action plan's educational goals of the highest priority?

Does the action plan represent work that is complementary, but not duplicative, of work of educational entities?

Are there potential collaborators for these action plans?

Are you, as a stakeholder, aware of potential grant/contract funding sources?

Are there educational goals of this action plan that should be eliminated or handed off to other entities?

Another key part of UNL Extension and Agricultural Research Division stakeholder input process is the participation in the IANR strategic planning process. Both UNL Extension and Agricultural Research Division had representatives present at, and received resulting data from, the listening sessions. Listening session feedback is shared with the action plan teams. Our institution considers itself fortunate that faculty (specialists, educators and researchers) engage in one-on-one working relationships with many of the state's governmental, educational, and business leaders. This engagement provides access to information about

trends and issues that impact Nebraska citizens.

Also, most IANR departments, research and extension centers, interdisciplinary centers and programs have external advisory groups representing stakeholders and users. These groups meet at least annually and provide input on current and future programs.

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 External Focus Groups

Brief explanation.

We use several methods to identify individuals and groups who provide programming process input:

Action teams are responsible for identifying stakeholders familiar with the subject matter and related issues impacting state residents. As an example of input received, the Community Resource Development action team shared the following:

Almost all (92%) of the stakeholders were familiar with the action team's programming. They were most familiar with Nebraska EDGE, Rural News Bits, the Nebraska Rural Institute, Nebraska Rural Poll, Nebraska Electronic Main Street, Master Navigator and Real Colors; although, some programs were not as recognized as others. In the future, we will work on better marketing all programs.

When asked if the action team objectives represent work that is complementary to, but does not duplicate, work of other educational entities, all but two stakeholders agreed with that assessment. One respondent clarified his answer this way, "Maybe' would be a better choice. There is some overlap when you are discussing programs, but there are not enough service providers in any of the agencies or entities to cover the entire state, so I think of us all as complementary."

The stakeholders were asked the two or three most pressing concerns that their communities face. Some of the concerns listed include: lack of young people, retention of existing businesses, lack of funding, depopulation, lack of leadership capacity, lack of higher paying full-time jobs, loss of participants in community groups, poor participation in community groups, strengthening the business core, promoting orderly growth, school consolidation, property tax issues, community vision and wealth retention.

For each IANR listening session, the host extension educators were asked to invite key community stakeholders. In addition, many of the listening sessions issued a general invitation to the public.

Representatives from commodity groups, the green industry and related industrial entities participate in the IANR department advisory committees. These advisory groups provide departmental and extension/research programmatic goal input.

UNL Extension and departments compare action plans to insure congruence. This happens through group discussions between departmental and extension/research administrators and departmental administrative attendance as a part of the extension action plan team meetings. The 2005 planning meetings held in fall 2005 included research/extension faculty and department heads.

Additionally, several action plan teams hold regular meetings through telephone conference calls or face-to-face.

4-H youth development has engaged over 500 youth and 500 adults across the state to identify key issues, i.e. the need to engage young people in local decision making.

Latino and Native American audiences are helping plan and deliver programs to promote cross cultural understanding and involvement of teens in local decision making and career planning.

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
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting specifically with non-traditional individuals
- Survey specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public

Brief explanation

Meetings and reports submitted by the extension action plan teams and research advisory committees indicate that while stakeholders generally see their goals as in alignment with Nebraskans' needs, modifications need to be ongoing to insure that the plan of work goals are positioned to have extension/research partner with other educational entities. The general tone of

stakeholder reviewers is that the action plan teams' educational goals focus on high priority issues. Encouragement from stakeholders to not duplicate, but partner with other educational entities, remains a key item, as does the need to market and promote educational efforts undertaken. Additional themes that remain consistent are:

UNL Extension needs to be able to respond more rapidly.

Bring other partners to the table for planning and implementation.

Become better acquainted with other entities delivering education in various program areas.

Continue to use technology for program delivery.

Market your programs more widely.

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.

UNL Extension and Agricultural Research Division believe that stakeholder input is essential to developing and delivering on-target educational programs. Through stakeholder involvement:

UNL Extension programs are better marketed across the state.

Program co-sponsorships become more likely as others learn about programs.

Collaborating entities become program participants.

Collaborating entities become sources of matching funds to deliver educational programs.

The IANR listening sessions continue to help identify priority issues for incorporation into educational programs. Throughout the 2004 and 2005 listening sessions, the issues of highest priority for educational programming were economic development, community vitality and water quality and quantity.

V. Planned Program Table of Content

S. NO.	PROGRAM NAME
1	A quality Environment and Effective Natural Resource Management
2	Sustainable and Economically Viable Food and Biomass Systems
3	Viable Communities and Appropriate Quality of Life for Individuals and Families

V(A). Planned Program (Summary)

1. Name of the Planned Program

A quality Environment and Effective Natural Resource Management

2. Brief summary about Planned Program

Abundant natural resources allow agricultural production that fuels a majority of Nebraska's economic activity. And agriculture's economic strength relies heavily on responsible surface and ground water management that provides irrigation in more than 50 percent of crop production. Nebraska's land and water resources also support a myriad of biological resources. Wildlife habitat provides for hunting, fishing and other outdoor recreation. Stewardship of Nebraska's natural resources, therefore, is vital for a sustainable economic future and high quality of life.

IANR's natural resource-related research and extension programs will focus on:

Development and implementation of technologies to manage Nebraska's water resources.

Development and implementation of technologies to manage livestock waste.

Development and implementation of technologies to manage soil and range resources.

Protection of natural resources to ensure adequate inventories to meet resource managers' needs.

Development and implementation of technology to mitigate environmental change.

Protection of Nebraska's forestry, aquatic and natural resources for future use and enjoyment.

IANR will provide its extension programming through the following entities: Natural Resources and Environment, Integrated Crop Management, Integrated Animal Systems Management and Community and Residential Environment action team work groups.

The institute will also continue to conduct important research, much of which will be interdisciplinary.

Because this planned program covers more than 10 knowledge areas, each knowledge area listed may represent additional areas as indicated in the parentheses: * 102 (101, 103, 104) * 111 * 112 (131, 134) * 121 (122) * 123 (124, 125) * 132

(141) * 135 (136) * 403 (133) * 405 * 605

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 : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 102 25% Soil, Plant, Water, Nutrient Relationships
- 111 11% Conservation and Efficient Use of Water
- 112 15% Watershed Protection and Management
- 121 11% Management of Range Resources
- 123 1% Management and Sustainability of Forest Resources
- 132 9% Weather and Climate
- 135 8% Aquatic and Terrestrial Wildlife
- 403 17% Waste Disposal, Recycling, and Reuse
- 405 1% Drainage and Irrigation Systems and Facilities
- 605 2% Natural Resource and Environmental Economics

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

1. Situation and priorities

Nebraskans expect continued improved natural resource management. With more than eight million acres of irrigated land in Nebraska, irrigation management education will play a critical role in conserving limited water supplies and protecting water quality.

A sustained drought, increased competition for finite water resources, depletion of ground water aquifers, reallocations of surface water supplies through interstate water compacts and implementation of new Nebraska legislative bill (LB 962) threaten profitable agricultural production in Nebraska and endanger rural communities' economic stability.

At the same time, recreational and environmental interests are questioning the water management policies resulting from these

factors. Farmers, ranchers, Natural Resources District personnel, resource managers, policy makers and agricultural lenders are uncertain about the viability of water management policies, the long-term consequences of resource use alternatives and the optimal mechanisms and management strategies to achieve outcomes envisioned by planning processes. All these stakeholders need research-based scientific information and decision-support systems to make effective decisions and manage limited water supplies most efficiently and profitably.

To provide appropriate and scientifically accurate information to all stakeholders, scientists must measure components of the water balance in existing cropping systems and new cropping systems that may provide economic sustainability and water conservation. They must then integrate the resulting data into effective strategies to manage existing water resources, quantify management tradeoffs and formulate effective water conservation practices. Ultimately, success requires that scientists take research results and transform and deliver them to stakeholders and policy makers in understandable and useable formats. The approximately 50 percent of Nebraska's land area that is pasture and rangeland provides the basic support for the extensive livestock industry. We must manage these grasslands to support the livestock industry and to provide wildlife habitat and other environmental benefits. Effective livestock manure management is also critical to sustain the livestock industry and protect the environment.

2. Scope of the Program

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

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

1. Assumptions made for the Program

Water and other natural resources are critical to Nebraska's well-being.

New policies and regulations will require producers to make changes in their water management and other production practices. University of Nebraska–Lincoln has faculty resources to address research and extension program needs related to environmental protection and natural resource management.

Producers and policy makers will need improved water management tools and basic knowledge to address Nebraska's critical water issues.

Producers will adopt new practices if those practices demonstrate effectiveness and positive economic impact.

2. Ultimate goal(s) of this Program

Nebraskan's will have the appropriate technologies to manage and protect limited water supplies.

Nebraska livestock producers will have and adopt the appropriate practices to manage livestock manure in ways that protects the environment and are economically feasible.

Nebraska's soil and range resources will be managed to enhance the quality of the resource and sustain crop and livestock production.

Inventories of Nebraska's natural resources will effectively serve the needs of resource managers and policy makers.

Nebraskans will be able to adapt to and manage environmental change and assure the appropriate protection of forestry, aquatic, wildlife and other natural resources.

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
2007	47.0	0.0	34.0	0.0
2008	47.0	0.0	34.0	0.0
2009	47.0	0.0	34.0	0.0
2010	47.0	0.0	34.0	0.0
2011	47.0	0.0	34.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

IANR will conduct research and deliver extension education programs that will enable Nebraska agricultural water users to use water in ways that maximize efficiency and profitability, protect water quality and meet regulatory requirements. Key elements of this effort include:

- Development of an improved understanding of basic plant, water, soil and climate relationships.
- Evaluation of alternative water delivery systems including sprinkler irrigation technologies and sub-surface drip irrigation systems.
- Evaluation of alternative irrigation water management strategies for all irrigation system types and particularly for situations where deficit irrigation is necessary.
- Development of adapted crop varieties, using either conventional breeding programs or genetic modification, that are more drought tolerant, perform well in deficit irrigation situations or require less evapotranspiration for profitable production.
- Evaluate alternative crops that require less applied irrigation water or are adapted to non-irrigated production, that will fit into Nebraska cropping systems and for which a market exists.
- Evaluate opportunities for shifting from irrigated to non-irrigated production or other enterprises that will maintain producer and community economic viability and sustainability.
- Develop decision-making support systems that enable producers, policy makers, financial institutions and others to make critical decisions regarding crop production and water resources use.
- Enhance research and extension education programs that will increase the scientific knowledge base and public understanding of the occurrence, movement and quality of ground water; factors that impact the quantity and quality of surface water; the interrelationships between ground water and surface water; and the ecology of Nebraska’s ground water and surface water systems.
- Develop research and extension education programs that analyze the water resource and economic impacts of existing or proposed public policies.
- Enhance research and extension education programs that enable Nebraskans to protect ground water and surface water quality and respond to regulatory requirements.
- Enhance research and extension education programs that will enable communities and individuals to better understand and use appropriate technologies to protect the quality of drinking water supplies and to remove contaminants when drinking water standards are exceeded.
- Research-based information will be provided for individuals, groups and decision makers that will enable informed decisions relative to use of limited water supplies and protection of water quality.

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention 	<ul style="list-style-type: none"> ● Newsletters ● TV Media Programs ● Web sites

● Demonstrations	
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3. Description of targeted audience

Nebraska farmers and ranchers, along with landowners, are the primary target audience for this work. In addition, target audiences will include land managers, bankers, agricultural consultants and agribusiness professionals who provide products and services to farmers and ranchers. The program's research and education efforts will provide valuable information for state and local policy makers (especially Natural Resource District Boards of Directors) as they make decisions regarding natural resources issues. The program will provide agency staff with the knowledge they need to carry out the agency responsibilities and mandates.

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 Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	10000	20000	8000	20000
2008	10000	20000	8000	20000
2009	10000	20000	8000	20000
2010	10000	20000	8000	20000
2011	10000	10000	8000	20000

2. (Standard Research Target) Number of Patents

Expected Patents

2007 :1 2008 :1 2009 :1 2010 :1 2011 :1

3. Expected Peer Review Publications

Year	Research Target	Extension Target
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(H). State Defined Outputs

1. Output Target

- Scholarly publications and outputs related to water management and water quality.

2007 :50 2008 :50 2009 :50 2010 :50 2011 :50

- Number of water management and water quality education workshops/presentations, continuing education programs, web-based curricula and field days/tours.

2007 :150 2008 :150 2009 :150 2010 :150 2011 :150

- Number of Agricultural Research Division projects that include water management and water quality as a key component.

2007 :50 2008 :50 2009 :50 2010 :50 2011 :50

- Number of new extension publications and other education resources developed.

2007 :20 2008 :20 2009 :20 2010 :20 2011 :20

- Number of scholarly publications and outputs addressing environmental and natural resources issues other than water management and water quality.

2007 :30 2008 :30 2009 : 30 2010 :30 2011 :30

- Number of Agricultural Research Division projects that address environment and natural resource issues other than water management and quality.

2007 :30 2008 :30 2009 : 30 2010 :30 2011 :30

- Number of education workshops/presentations, continuing education programs, web-based curricula and field days/tours that address environment and natural resource issues other than water management and quality.

2007 :40 2008 :40 2009 : 40 2010 :40 2011 :40

V(I). State Defined Outcome

1. Outcome Target

Irrigators will gain new knowledge and awareness of water conservation practices, crop water use rates, limited irrigation, irrigation scheduling and new irrigation technologies.

2. Outcome Type : Change in Knowledge Outcome Measure

2007 :750 2008 : 1000 2009 : 1250 2010 :1250 2011 : 1250

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

1. Outcome Target

Nebraska farmers, ranchers, businesses and home owners will adopt new practices that will improve water management and protect water quality. This will be measured as the percentage of education program participants who indicate that they have adopted or plan to adopt new practices.

2. Outcome Type : Change in Action Outcome Measure

2007 :65 2008 : 70 2009 : 70 2010 :70 2011 : 70

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

1. Outcome Target

Livestock producers will continue to gain knowledge and awareness of appropriate practices to manage livestock manure.

2. Outcome Type : Change in Knowledge Outcome Measure

2007 :400 2008 : 400 2009 : 450 2010 :500 2011 : 500

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

1. Outcome Target

Livestock producers will develop comprehensive nutrient management plans (CNMPs) and use best management practices for livestock manure handling and storage.

2. Outcome Type : Change in Action Outcome Measure

2007 :300 2008 : 300 2009 : 300 2010 :300 2011 : 300

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

1. Outcome Target

Nebraska farmers will increase their knowledge and awareness of how integrated pest management and pesticide best management practices can help protect water quality.

2. Outcome Type : Change in Knowledge Outcome Measure

2007 :5000 2008 : 5000 2009 : 5000 2010 :5000 2011 : 5000

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

1. Outcome Target

Nebraskans will gain increased awareness and knowledge of natural resources including wildlife, forest resources and rangeland and the relationship between natural resources stewardship, sustainability, economic viability and the environment.

2. Outcome Type : Change in Knowledge Outcome Measure

2007 :5000 2008 : 5000 2009 : 5000 2010 :6000 2011 : 6000

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

1. Outcome Target

Consumptive water use by irrigated crops will be reduced. The outcome measure will be the percent reduction of estimated consumptive water use when the current year is compared to the estimated consumptive water use in calendar year 2006. The consumptive water use will be estimated using the irrigation water pumped in Natural Resources Districts that require the use of water measurement devices.

2. Outcome Type : Change in Action Outcome Measure

2007 :0 2008 : 0 2009 : 5 2010 :0 2011 : 10

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

1. Outcome Target

Nebraska will not exceed its allocation of water in the Republican River as allowed by the interstate compact with Kansas and Colorado. Nebraska's allocation is 49% of the average annual water supply. The output measure will be the percent of the Republican River average annual water supply used by Nebraska.

2. Outcome Type : Change in Condition Outcome Measure

2007 :49 2008 : 49 2009 : 49 2010 :49 2011 : 49

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

The following factors may significantly affect program outcomes:
Weather conditions such as prolonged drought.

Economic constraints that can threaten potential investment in new water management technology and management.
Restrictions on water use that can impact irrigated agriculture.
Implementation of new legislation and development of regulations by Natural Resource Districts.
Competition for limited water supplies among agriculture, wildlife, recreation and municipalities.
Conflicts between ground water and surface water users.

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

1. Evaluation Studies Planned

- During (during program)

Description

We will use program participant surveys as the primary evaluation method. We will administer a mix of surveys at program completion and use follow-up surveys to determine actions taken. We will use Information from state and federal agencies to estimate the adoption of practices to address natural resource issues. Information from the Nebraska Department of Natural Resources will be used to determine the compliance with the Republican River Interstate Compact. Data from Natural Resource Districts will provide information relative to irrigation water use for making estimates of irrigated crop water consumptive use with comparisons made to the base year of calendar year 2006.

2. Data Collection Methods

- Sampling
- Mail
- On-Site
- Observation
- Other (Agency data)

Description

Most program activity will involve some type of survey of program participants. Some selected programs will have more formal, in-depth surveys after the sequence of program activities to determine practice changes and adoption of new technology. Faculty will collect some data by observing practices within selected geographic regions over a period of time. Data from the Nebraska Department of Natural Resources and Natural Resources Districts will be obtained directly from the individual agencies.

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

Sustainable and Economically Viable Food and Biomass Systems

2. Brief summary about Planned Program

Agriculture remains Nebraska's largest, most important industry. In 2005, the Nebraska Policy Institute reported that Nebraska agribusinesses provided nearly 31% of the state's total employment. IANR's research, education, extension and service programs have played an integral role in enhancing the competitiveness, increasing the profitability and improving the sustainability of the state's agriculture and agribusiness. As the industry evolves, IANR's research and education programs to bolster traditional agriculture while providing resources for alternative enterprises will be critical to sustained growth. IANR must continue to address the entire food production, processing, marketing, and consumption cycle, integrating producers' and consumers' concerns to provide a safer and more sustainable food production system. IANR will maintain strong programs in production, major livestock species marketing and processing, traditional field crops and specialty crops such as dry edible beans and turf. The institute will place even greater emphasis on agriculture's role in developing bio-renewable energy through the development and integration of resource-efficient crop and livestock production systems. Finally, it will focus special attention on economically viable, environmentally compatible, integrated approaches for commodity production, protection and processing. Because this planned program covers more than 10 knowledge areas, each knowledge area listed may represent additional areas as indicated below: * 205 (201, 202, 203, 204, 206) * 216 (211, 212, 213, 214, 215) * 307 (301, 302, 303, 304, 305, 306, 308) * 315 (311, 312, 313, 314) * 402 (401, 404) * 501 (502, 503, 504) * 511 (512) * 601 (602, 603, 604) * 606 (609, 610, 611) * 901 (902, 903)

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 : No

V(B). Program Knowledge Area(s)**1. Program Knowledge Areas and Percentage**

- 205 25% Plant Management Systems
- 216 21% Integrated Pest Management Systems
- 307 18% Animal Management Systems
- 315 11% Animal Welfare/Well-Being and Protection
- 402 6% Engineering Systems and Equipment
- 501 5% New and Improved Food Processing Technologies
- 511 3% New and Improved Non-Food Products and Processes
- 601 8% Economics of Agricultural Production and Farm Management
- 606 2% International Trade and Development
- 901 1% Program and Project Design, and Statistics

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

Nebraska's long-term economic growth and citizen well-being depend upon economically viable and sustainable food and biomass systems. To remain viable, our IANR research, extension and education programs must focus on the development and improvement of resource-efficient, environmentally compatible, and economically viable food and biomass production systems with a greater focus on value-added production. To assure we reach our goals, we must address high energy costs through a focus on development of more energy-efficient production systems and incorporation/expansion of bio-energy as an integral production systems component. Nebraska is already a major crop and livestock producing state and is uniquely positioned to become a major producer of bio-energy, particularly ethanol and soy diesel. Ethanol production from feed grain is a major and growing industry. Other potential growth areas include ethanol production from biomass and soy diesel from soybeans. To adequately support these growth areas, we must increasingly focus on expanding our research and extension programs in energy-efficient irrigated agriculture, use agricultural products for biofuel production and develop economic and environmentally compatible ways to

use grain/biomass byproducts. We already have programs investigating feeding wet and dry distillers grain to livestock, and we will place even greater emphasis on these efforts in the future. We will also continue to develop water-efficient crop cultivars and integrated crop management decision tools to help producers develop systems approaches to crop and livestock production that reduce energy inputs and use natural resources such as water efficiently. Value-added products, services and technologies will remain a major goal of our state programs. While ethanol will continue to be a growth industry in the state, we will also continue and expand our research and extension value-added efforts in food processing; textiles, clothing and design; and biomedical/bioagricultural technology. These newer focus areas promise to support strong economic growth for both rural and urban communities.

2. Scope of the Program

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

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

1. Assumptions made for the Program

We will ensure alignment between research and extension efforts throughout this program of work.

We will retain current faculty positions.

We see the continued major role of agriculture in the state.

We will have financial support from state, university and federal programs that adequately support base programs. Thus, IANR can continue to provide broad-based programs with the flexibility to respond quickly to emerging issues and address long-term citizen needs.

Entrepreneurism and value-added products associated with agricultural production will be major contributors to rural and urban economic viability and state economic growth.

2. Ultimate goal(s) of this Program

Nebraska farmers, ranchers and agribusinesses will have effective, productive management systems.

Nebraska farmers and ranchers will have sustainable crop and livestock production systems.

Nebraska agricultural commodities and products will have viable domestic and global markets.

Nebraska's ag-based industries will have available an appropriate array of products and food technologies.

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
2007	116.0	0.0	83.0	0.0
2008	116.0	0.0	83.0	0.0
2009	116.0	0.0	83.0	0.0
2010	116.0	0.0	83.0	0.0
2011	116.0	0.0	83.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Conduct research and extension programs to develop/deliver new and improved crop and livestock integrated management programs.

Conduct research and extension programs to develop/deliver new and improved information to help producers create sustainable crop and livestock production programs.

Conduct research and extension programs to develop/deliver new and improved information to identify new and emerging markets and marketing strategies for agricultural products and agribusiness.

Conduct research and extension programs to develop/deliver information on new or improved food products and technologies and emerging efficiencies of production to Nebraska's ag-based industries.

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Newsletters ● TV Media Programs ● Web sites

3. Description of targeted audience

Targeted audiences will include a broad range of small and large agricultural producers and processors. Nebraska-based processors, especially start-up companies, will receive high priority. Specific groups that will use the research and education programs include:

- Crop and livestock producers
- State agribusiness
- Food processing facilities
- Natural Resource Districts
- Research and extension specialists
- Extension educators
- Commodity groups
- Nebraska independent crop consultants
- Seed fertilizer and pesticide suppliers
- Commercial pesticide applicators
- Certified crop advisors
- Neighboring state institutions
- Scientists and engineers developing new knowledge

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 Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	37100	300000	750	2000
2008	37100	300000	750	2000
2009	37100	300000	750	2000
2010	37100	300000	750	2000
2011	37100	300000	750	2000

2. (Standard Research Target) Number of Patents

Expected Patents

2007 :2 2008 :2 2009 :2 2010 :2 2011 :2

3. Expected Peer Review Publications

Year	Research Target	Extension Target
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(H). State Defined Outputs

1. Output Target

- Number of scholarly publications and outputs related to economically viable and sustainable food and biomass systems.

2007 :220 2008 :220 2009 :220 2010 :220 2011 :220

- Number of workshops, continuing education programs, web-based curricula and field days/tours related to economically viable and sustainable food and biomass systems.

2007 :445 2008 :445 2009 :445 2010 :445 2011 :445

- Number of Agricultural Research Division projects related to economically viable and sustainable food and biomass systems.

2007 :190 2008 :190 2009 :190 2010 :190 2011 :190

- Number of new extension publications and other education resources related to economically viable and sustainable food and biomass systems.

2007 :35 2008 :35 2009 :35 2010 :35 2011 :35

- Number of new or improved plant and animal genetic materials or resources related to economically viable and sustainable food and biomass systems.

2007 :25 2008 :25 2009 :25 2010 :25 2011 :25

- Number of new products and decision tools developed and made available to clientele related to economically viable and sustainable food and biomass systems.

2007 :10 2008 :10 2009 :10 2010 :10 2011 :10

V(I). State Defined Outcome

1. Outcome Target

Nebraska farmers will increase profitability through adoption of research and extension information provided by IANR programs (measured by value placed on the information by clientele).

2. Outcome Type : Change in Knowledge Outcome Measure

2007 :133400000 2008 :133400000 2009 :133400000 2010 :133400000 2011 :133400000

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

1. Outcome Target

Nebraska ranchers and feeders will increase profitability through adoption of research and extension information provided by IANR programs (measured by value placed on the information by clientele).

2. Outcome Type : Change in Knowledge Outcome Measure

2007 :81262000 **2008 :** 81262000 **2009 :** 81262000 **2010 :**81262000 **2011 :** 81262000

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

1. Outcome Target

Nebraska farmers and ranchers will have sustainable food and biomass systems through adoption of best management practices (measured by percent of clientele adopting best management practices).

2. Outcome Type : Change in Knowledge Outcome Measure

2007 :70 **2008 :** 70 **2009 :** 70 **2010 :**70 **2011 :** 70

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

1. Outcome Target

Nebraska will have access to a highly trained and educated workforce for economically viable and sustainable food and biomass systems (indirectly measured by number of undergraduate and graduate students receiving degrees).

2. Outcome Type : Change in Knowledge Outcome Measure

2007 :100 **2008 :** 100 **2009 :** 100 **2010 :**100 **2011 :** 100

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

1. Outcome Target

Nebraska farmers will rely on IANR research and extension programs to assure an economically viable and sustainable food and biomass system (measured by percent of state acreage represented at education programs).

2. Outcome Type : Change in Knowledge Outcome Measure

2007 :64 **2008 :** 64 **2009 :** 64 **2010 :**64 **2011 :** 64

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

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

Description

Downturn in the state economy could impact outcomes.
 Natural, disease or human-driven catastrophes would impact outcomes.
 Complete refocus of University of Nebraska program priorities would affect outcomes.

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

1. Evaluation Studies Planned

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

Description

We will conduct evaluations through the life of this program of work through multiple listening sessions each year; through the formal and informal evaluations completed in conjunction with workshops, field days, continuing education workshops and peer reviews of planned research and extension programs; and from external peer panels during six-year reviews of unit and issue-based reviews of teaching, research and extension programs.

2. Data Collection Methods

- Sampling
- On-Site
- Structured
- Observation
- Journals

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

1. Name of the Planned Program

Viable Communities and Appropriate Quality of Life for Individuals and Families

2. Brief summary about Planned Program

Strong people, strong families and strong communities lead to a more stable society. Multiple issues impact Nebraska's communities, families, youth and children. Economically, some communities take a strong and proactive approach to economic, community and family-related issues while others struggle to remain viable.

IANR's community, and appropriate individual and family-related research and extension programs, will focus on:

Development and implementation of technologies to help assure a safe, pathogen-free food supply to guard public health.

Development and implementation of technologies to help assure Nebraskans have knowledge to make effective choices about their health, wellness and food choices.

Development and implementation of technologies to help assure Nebraska's community members have the knowledge to be effective leaders.

Development and implementation of technologies to help assure Nebraska's communities have access to the economic development tools they need.

Because this planned program covers more than 10 knowledge areas, each knowledge area listed may represent additional areas as follow: * 608 (607) * 703 (701, 702, 704) * 711 * 712 * 724 (721, 722, 723) * 801 (804, 805) * 802 * 803 * 806

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 : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 608 10% Community Resource Planning and Development
- 703 25% Nutrition Education and Behavior
- 711 5% Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources.
- 712 10% Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxins
- 724 10% Healthy Lifestyle
- 801 5% Individual and Family Resource Management
- 802 5% Human Development and Family Well-Being
- 803 5% Sociological and Technological Change Affecting Individuals, Families and Communities
- 806 25% Youth Development

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

1. Situation and priorities

Three key items guide this plan:

Agriculture and related food processing are Nebraska's main industry. It is essential that agricultural related industry maintain the public trust.

Nebraska ranks near the bottom of the states in health/wellness of children. It is critical for the next generation that health, physical activity and related increases in medical costs be addressed.

Nebraska's 550 small towns and cities must have leadership and economic tools to survive. Some small communities are disappearing because of resources lost. To maintain the communities we have as vital places for people to live and work educational intervention is essential.

2. Scope of the Program

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

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

1. Assumptions made for the Program

Land grant universities can develop and deliver educational programs to help individuals, families and communities make more informed decisions: knowledge change leads to behavior change and behavior change leads to condition change.

Education increases human capital.

Out-migration of young, educated residents will accelerate community decline.

Medical costs will increase if healthy eating and activity behaviors are not addressed.

Youth can positively affect their communities.

2. Ultimate goal(s) of this Program

Food and food processing establishments will use safe food handling practices that safeguard public health.

Nebraskans will have more healthful eating and activity behaviors that may reduce health care costs.

Community leaders will be confident in their decision making roles and help communities retain vitality.

Youth will become informed decision makers and active community members who contribute to economic and family vitality.

Communities will use available tools to strengthen their economic base; i.e., mentoring of entrepreneurs.

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
2007	49.0	0.0	14.0	0.0
2008	49.0	0.0	14.0	0.0
2009	49.0	0.0	14.0	0.0
2010	49.0	0.0	14.0	0.0
2011	49.0	0.0	14.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

The institute will conduct research and deliver extension education programs that will enable Nebraskans to strengthen their families and communities. Output efforts will help reduce food-borne illness, increase healthy eating and active behaviors, increase number of self-confident community leaders and increase the number of communities with access to tools to aid economic development.

Increasingly, learners lead time-pressed lives and want to access educational information at their convenience. While face-to-face teaching remains an ongoing focus of our efforts, many learners may choose to access educational information online through Internet sites, module learning and ask-an-expert. Therefore, we will employ a blend of teaching strategies to accomplish our educational goals and research of reaching individuals who want just-in-time research-based information and in depth behavior changing educational experiences.

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● TV Media Programs ● Web sites ● Other 1 (Podcasting)

3. Description of targeted audience

Our targeted audiences include: 1. Food processing and retail establishment owners and staff 2. Children, youth and families 3. Youth and adults in community leadership roles 4. Entrepreneurs 5. Local and state decision 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 Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	10000	20000	50000	20000
2008	10000	20000	50000	20000
2009	10000	20000	50000	20000
2010	10000	20000	50000	20000
2011	10000	20000	50000	20000

2. (Standard Research Target) Number of Patents

Expected Patents

2007 :0 2008 :0 2009 :0 2010 :0 2011 :0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(H). State Defined Outputs

1. Output Target

- 1) Extension and research refereed journal articles on viable communities and appropriate quality of life for individuals and families projects accepted.

2007 :5 2008 :6 2009 :7 2010 :8 2011 :10

- 2) Number of extension in-depth community, family and Individual topic-related educational workshops.

2007 :30 2008 :35 2009 :40 2010 :45 2011 :50

- 3) Number of extension community, family and individual program-related curricula, publications and other educational resources developed.

2007 :10 2008 :10 2009 : 10 2010 :12 2011 :15

- 4) Number of Agricultural Research Division projects that focus on community and appropriate quality of life for individuals and families issues.

2007 :3 2008 :3 2009 : 4 2010 :5 2011 :6

V(I). State Defined Outcome

1. Outcome Target

2) Nebraskans will gain knowledge to make effective choices about their health, wellness and diet to reduce their health care costs. This will be measured by comparing annual statistics from Nebraska Health and Human Services (NHHS) for Nebraskans having a decreased prevalence of obesity, heart disease and osteoporosis and reduced dependence on medical care for diet-related diseases.

Individuals will increase knowledge of food selection and preparation with reduced fat and/or calories, USDA serving sizes and importance of adequate time spent in physical activity each day and increased understanding of the relationship between diet and physical activity to improve personal health.

Individuals will select, prepare and eat recommended amount of fruits, vegetables, low-fat proteins and dairy and whole grains. In addition, individuals will better balance their intake of calories with their energy expenditures.

2. Outcome Type : Change in Condition Outcome Measure

2007 :500 2008 : 1000 2009 : 1000 2010 :1000 2011 : 1000

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

1. Outcome Target

3) Nebraska's communities will have access to the tools they need to retain current residents and businesses and create opportunities for new residents and businesses. This will be measured by comparing annual statistics from the Nebraska Department of Economic Development (NDED) and surveys/case studies.

Community leaders and business owners will understand the importance of strategic planning, support business development techniques and information technology to support community's development.

Businesses within communities will work to be more profitable, entrepreneurs will be supported by the communities and informational technology will be used effectively to support community growth.

Communities will have planned for the future, new businesses will have been created, and informational technology will be used to create partnerships between the community's public and private sectors.

2. Outcome Type : Change in Condition Outcome Measure

2007 :15 2008 : 25 2009 : 30 2010 :40 2011 : 50

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

1. Outcome Target

4) Nebraska's youth will be informed decision makers and remain active members of their communities as they reach adulthood. This will be measured by surveys, interviews and case studies to document evidence of the benefits (impact) to a community for involving youth in the decision making process. Nebraska will have evidence of the roles and responsibilities that youth are assuming at the community level such as being included on community agendas, leading community decisions and helping establish community policies.

Community members will have an increased understanding of how youth can engage with adults in a community decision making process to solve problems impacting their communities.

Youth and adults will report improved decision making and problem solving skills. The number of youth engaged as partners in community civic activities will increase.

2. Outcome Type : Change in Condition Outcome Measure

2007 :100 2008 : 250 2009 : 300 2010 :400 2011 : 500

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

1. Outcome Target

1) Food handlers will practice safe food handling procedures to reduce food-borne illness outbreaks. This will be measured by comparing annual Nebraska statistics from Nebraska Health and Human Services (NHHS) for reduced incidents of food-borne illness because of safe food handling, decreased medical costs due to food-borne illness outbreaks and decreased days lost from work.

Food handlers (food service workers, food processors and livestock producers) will increase their knowledge of safe food handling practices measured by increased knowledge about adequate food handling and preparation and animal management practices.

Food handlers will implement safe food handling practices for the reduction of food borne illnesses because of strategies learned through ServSafe, HAACP and Quality Assurance.

2. Outcome Type : Change in Condition Outcome Measure

2007 :2000 2008 : 2000 2009 : 2000 2010 :2000 2011 : 2000

3. Associated Knowledge Area(s)

- {NO DATA ENTERED}

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

Description

Downturn in the state's economy will impact outcomes.

Natural, disease or human-driven catastrophes will affect outcomes.

Unforeseen budget reductions that limit the creation of new knowledge or the curtailment of extension educational programs would impact outcomes.

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

1. Evaluation Studies Planned

- Retrospective (post program)
- Before-After (before and after program)
- Case Study
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

Description

Research and extension faculty will use a range of evaluation strategies written into the programs developed to assess program impact. Indicators of success have been identified for each goal and will be used as indicated above.

2. Data Collection Methods

- Sampling
- Mail
- On-Site
- Case Study

Description

Studies will be conducted through Hatch projects and extension educational programs. All studies will be certified by the Institution Review Board of the University of Nebraska-Lincoln.