

2012 South Dakota State University Combined Research and Extension Plan of Work

Status: Accepted

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I. Plan Overview

1. Brief Summary about Plan Of Work

South Dakota State University was founded as a land-grant college in 1881 - nearly eight years before South Dakota became a state. Throughout its spirited history, SDSU has seen a lot of change. And with state and federal funding becoming less available, tough decision making is forcing change again. But in all the somberness, opportunity awaits the College of Agriculture and Biological Sciences at SDSU. As a result of severe budget cuts, the ABS College has evaluated itself and is making major changes, particularly in the organization of South Dakota Cooperative Extension Service. As SDSU Extension moves forward with its restructuring, it is committed to re-establishing itself as the premier outreach link, which serves as the front door to higher education opportunities across South Dakota.

This integrated Plan of Work is a statement of South Dakota's intended activities for federal fiscal years 2012 to 2016. Due to the restructuring of SDSU Extension, this plan will evolve over time as changes take effect and stakeholder's needs are identified. The most significant change to SDSU Extension is that seven Regional Extension Centers across South Dakota will replace the county offices throughout the state. SDSU Extension will also maintain three Federally Recognized Tribal Extension Program offices as well as continue with its existing facilities on the SDSU Campus.

The College of Agriculture and Biological Sciences at SDSU greatly enhances the quality of life in South Dakota through teaching, research and outreach. This is accomplished with research at the South Dakota Agricultural Experiment Station, educational programming conducted by SDSU Extension, and through Academic Programs. The SDSU College of Education and Human Sciences is an important partner to the ABS College, contributing to the understanding of the world and how it affects health and wellness, educational processes, and environmental issues.

Current research priorities for AES are based on bio-renewable energy economic development, applied genomic solutions, natural resource stewardship, community innovation and leadership, and enhancing grain/livestock food system economic development. Educational programming for SDSU Extension is offered within five program areas: Competitive Crop Systems, Competitive Livestock Systems, Youth and Community Leadership, Food and Family, and Urban/Rural Initiatives.

As the restructuring of SDSU Extension occurs, emphasis will be placed on developing Learning Communities throughout the state. Learning Communities will allow the university to better engage interested individuals and connect motivated learners with evidence-based experts. The over-arching goal of restructuring SDSU Extension is to develop a sustainable Extension system.

The population of South Dakota is 814,180 (2010 Census). From 2000 to 2010, it was the fastest growing state in the Midwest. The state grew by 7.9%; however, the minority population had a significant gain of 38.1 percent. Lincoln County continues to be the fastest growing county in South Dakota. One-third of the population is found in the two largest counties, and 47 percent of the population is found in the five largest counties. Forty-one counties had a loss in population since the 2000 census, most of which also have had a continual decline in population during the past 50 years.

Even though South Dakota shares the US average poverty rate of 13.5%, poverty rates in many South Dakota counties continue to be among the highest in the United States. The five poorest counties in South Dakota are at least 38% below the US poverty level. Unfortunately, the population of these five counties combined is 87% American Indian or Alaska Native.

The American Indian population represents nearly nine percent of the total state population. Unemployment, alcoholism, poor diet, obesity, diabetes and other health and social problems are prevalent in reservation areas with high poverty rates. South Dakota State University has developed working agreements with the four 1994 Land Grant Institutions located in South Dakota, and is continuing to offer programs that address these social and economic needs. South Dakota has a substantial American Indian population, and we place great value on education programs that serve this audience. While all Extension programs are available to the entire population of South Dakota, many of the programs that target American Indian needs are funded through FRTEP.

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	116.0	0.0	177.6	0.0
2013	116.0	0.0	177.6	0.0
2014	116.0	0.0	177.6	0.0
2015	116.0	0.0	177.6	0.0
2016	116.0	0.0	177.6	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

All AES research projects are subjected to peer and merit review prior to implementation. All Hatch and multi-state projects require independent peer reviews from two scientists that are knowledgeable in the respective subject area. The department head or a departmental executive committee identifies peer reviewers. The department head and the AES Director serve as merit reviewers.

A standard review instrument facilitates peer and merit reviews. Reviewers are required to comment on why the proposed research is needed, it's relevance to agriculture, the target audience, and how it compliments other research.

Proposals for research grants that are funded by stakeholder groups are subjected to review by the stakeholders themselves and by college administrators. Much like the CRIS system, stakeholder groups ask for annual progress reports on funded research.

Cooperative Extension Service administrators will serve as the merit review team for the respective components of the plan of work. Department heads, specialists and educators will conduct peer reviews of programs.

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 are based on input from traditional and non-traditional stakeholder groups who identified critical issues. For the purposes of program planning, South Dakota also considers the input of internal stakeholders, which includes Extension state specialists, field specialists, and scientists. The resulting Planned Programs address critical needs and opportunities through integrated research and educational programs.

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

Great efforts are made to seek out and include under-served and under-represented populations in the initial planning of research and Extension programs. In some cases, this involves direct contact with under-served and/or under-represented audiences. In other cases, mass media announcements are used to invite all South Dakotans to participate in program planning. In 2009, the South Dakota Cooperative Extension Service added an emphasis in Native American programming to assure this previously underserved audience received full access to all programs.

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

The Planned Programs address specific outcomes that occur over the 5-year period of this plan. Some Planned Programs may deliver initial outcomes and impacts in the first year, but the overall impact of these programs will be felt beyond the 5-year planning cycle. Each of the South Dakota Planned Programs list specific outcomes that document progress.

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

South Dakota State University has a strong history of actively integrating research, teaching and Extension programs to deliver science-based information to all citizens. Stakeholder input, from Cooperative Extension Service five-year assessment planning data and other sources, is also used by scientists and classroom educators to gain a better understanding of current needs. Joint FTE appointments give individuals the opportunity to work in a combination of research, Extension and teaching functions, allowing the further integration and transfer of information within the system.

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 specifically with non-traditional groups
- Survey specifically with non-traditional individuals

Brief explanation.

South Dakota State University solicits formal stakeholder input in many forms, from many sources, and at many locations. Methods of inviting stakeholder input include meetings or other communication with: Agricultural Experiment Station Research Farm Advisory Boards; Research Review Meetings with agricultural check-off groups including the South Dakota Soybean Research and Promotion Council, South Dakota Corn Utilization Council, South Dakota Beef Industry Council, South Dakota Oilseeds Council, South Dakota Pork Producers Council, South Dakota Wheat Commission, and others.

Input is also sought from state agricultural commodity groups including Ag Unity, the South Dakota Pork Alliance, the South Dakota Stockgrowers/Cattlemen, and the South Dakota Veterinary Medical Association.

Input is sought from funding organizations such as the National Institutes of Health, U.S. Department of Energy, National Science Foundation, NASA, Environmental Protection Agency, and the National Centers for Disease Control and Prevention. In addition, stakeholder input is solicited from governmental agencies, including: the Office of the Governor, the South Dakota Department of Agriculture, South Dakota Department of Environment and Natural Resources, South Dakota Game, Fish and Parks, South Dakota Department of Education and Cultural Affairs, Office of the State Veterinarian, Social Services, Job Service, National Agricultural Statistics Service, 1994 Institutions, and others.

Stakeholder input is sought at SDSU field day tours; SDSU agricultural meetings; Community Leader Meetings throughout the state; meetings with the South Dakota Board of Regents, South Dakota Legislature, and other elected officials and boards; and events open to the public such as the South Dakota State Fair and DakotaFest.

Additional input is solicited during comprehensive NIFA Departmental and Institutional Reviews, which span teaching, research and Extension activities.

Stakeholder input specifically for projects involving McIntire-Stennis funds is sought from the South Dakota Nurseryman's Association, the South Dakota Parks and Recreation Association, the South Dakota Department of Game, Fish and Parks, the U.S. Forest Service, and

also from special project-oriented groups like the Mortensen Group. This group works specifically on the Mortensen Ranch project, and includes NRCS, local RC&D groups, and other local entities.

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
- Open Listening Sessions
- Needs Assessments
- Use Surveys

Brief explanation.

SDSU Extension recognizes its on-going statutory requirements to invite citizens to participate in an advisory capacity. This is a valuable component of Extension that allows for full transparency and stakeholder input.

Historically, Extension has employed a three tiered advisory process - County Extension Advisory Boards, Field Education Unit Extension Advisory Boards, and the State Extension Advisory Board. This three tiered advisory process has been foundationally based upon Extension's presence at the county level. With the new organizational structure, the focus for Extension advisory capacity will be from a discipline/program-base rather than the previous location-based approach.

As a result, the following advisory structure will be implemented:

Each of the seven regional centers will engage five individuals per capstone program area to serve on their advisory board - resulting in a total of 25 individuals per regional center. These capstone representatives must reflect key constituents, industry and agency partners who are engaged in the discipline and will provide critical advocacy and advisory input/feedback to that Extension capstone program area.

Program Directors will have the ability to interact with the respective discipline representatives from the seven regional centers (35 individuals) to comprise a statewide Capstone Program Area Advisory Team.

Coordination for the regional center advisory teams will be the responsibility of the Director of Field Operations.

A detailed job description and definition of roles for Extension advisory board members will be completed by July 1, 2011. This will include terms of service, how often the advisory groups meet, etc.

Existing Field Education Unit Advisory Boards and the State Extension Advisory Board structure will be officially ended (sunset) at the September 2011 meeting of the State Extension Advisory Board.

The new Extension advisory structure will be operational beginning January 1, 2012.

County Commissioners will be asked to maintain a county advisory structure that engages the local 4-H Promotion and Expansion Committee in the advisory role. This

advisory structure would predominantly give guidance to county funded budgets and local 4-H expansion efforts.

On-going Stakeholder Input is often solicited by college leadership during special forums. For example, the SDSU College of Agriculture and Biological Sciences participates in a series of Community Leader Forums each fall. Elected leaders and community stakeholders are invited to attend a series of meetings to discuss the impact of current programs on their communities. These dialog sessions are important opportunities for a candid, two-way discussion of needs, programs, and future plans with local and state elected leaders.

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 the general public (open meeting advertised to all)
- Survey specifically with non-traditional groups

Brief explanation.

SDSU has established several formal opportunities for stakeholders to offer input regarding quality of programs, and current and future needs, as described earlier in this report. Because stakeholders are most often current clients, SDSU also actively works to identify individuals who have not previously participated. One component of the college civil rights compliance effort is focused on identifying new or underserved audiences, some of whom are minorities, and documenting efforts to invite their participation in program planning and in educational programs.

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.

Administrators evaluate all input, requests and comments from stakeholders to determine if patterns of need exist, and if resources can be directed to the client requests. SDSU Extension field specialists, state specialists, and AES scientists will actively seek out input to insure that research and education programs are fine-tuned to the current needs of stakeholders.

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Global Food Security and Hunger
2	Climate Change
3	Sustainable Energy
4	Childhood Obesity
5	Food Safety

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Global Food Security and Hunger

2. Brief summary about Planned Program

The planned program will conduct research and provide Extension information that will boost agricultural production in the state and nation, improve global capacity to meet the growing food demand, and foster innovation in fighting hunger by addressing food security for vulnerable populations. This includes the development of new crop varieties, increasing production efficiency, and sustainable utilization of animal resources.

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

4. Program duration : Medium Term (One to 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
202	Plant Genetic Resources	10%		20%	
205	Plant Management Systems	30%		30%	
302	Nutrient Utilization in Animals	30%		20%	
311	Animal Diseases	10%		20%	
601	Economics of Agricultural Production and Farm Management	20%		10%	
	Total	100%		100%	

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

1. Situation and priorities

Plant and animal agriculture are the largest portion of South Dakota's economy, and provide the greatest opportunity to address global food security and hunger. For more than a century, this region has been "the breadbasket of the world." Continuing in that tradition, South Dakota State University will assist producers in decreasing the unit cost of production and increasing profitability. Competitive farms and ranches must increase their productivity efficiency and supply a more uniform and higher quality product, which can be marketed for a premium. Therefore, the priorities of the program are to teach producers how new and advancing technologies can be utilized to increase their production efficiency.

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

We assume that increases in the global population, better marketing and transportation, and growing incomes will lead to increased global demand for food. In addition, the cost of food production will continue to change, and individual operations will have the flexibility to make management decisions that will increase the production efficiency of their operation without increasing the cost of production.

2. Ultimate goal(s) of this Program

The ultimate goal of this program is to make production agriculture more sustainable and cost effective, ultimately meet the growing global food demand.

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	57.4	0.0	100.1	0.0
2013	57.4	0.0	100.1	0.0
2014	57.4	0.0	100.1	0.0
2015	57.4	0.0	100.1	0.0
2016	57.4	0.0	100.1	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Plant breeders, entomologists, and plant pathologists will develop superior varieties with tolerance or resistance to insects and new disease races. Agronomists will evaluate crop management systems and forage systems that are best adapted to South Dakota, including areas with a history of limited growing season moisture. Soil scientists will develop more effective and cost efficient strategies for conserving soils and reducing fertilizer inputs in cropping systems. Entomologists, plant pathologists, and weed scientists will develop more effective and cost efficient means to safely control plant pests while reducing chemical inputs; including IPM and alternative methods. Horticulturalists will develop appropriate varieties for home gardeners and landscapers, and will teach cost effective production methods. Livestock scientists,

specialists and educators will further explore and teach producers how to maximize income through genetics, resource management and marketing. Hands-on Field Scouting School, crop tours, producer/grower meetings will be held. Provide one-on-one individual consultations. Research and timely information will be provided in news columns, current and up-to-date county and state websites, and Extension publications.

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 ● Billboards ● Newsletters ● TV Media Programs ● Web sites other than eXtension ● Other 1 (social media)

3. Description of targeted audience

Farmers, ranchers, agricultural land owners, hobby gardeners, homeowners and Master Gardeners.

V(G). Planned Program (Outputs)

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

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

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

V(H). State Defined Outputs

1. Output Measure

- Number of AES research projects which are intended to enhance agricultural profitability and address global food security.
- Number of CES programs for producers which are intended to enhance agricultural profitability and address global food security.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Average dollar per head of economic impact because of improved livestock production efficiencies.
2	Number of producers indicating greater knowledge of market indicators affecting their marketing plan.
3	Number of producers using in-depth analysis/ration balancing.
4	Number of producers growing alternative crops.

Outcome # 1

1. Outcome Target

Average dollar per head of economic impact because of improved livestock production efficiencies.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:2 2013:2 2014:2 2015:2 2016:2

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 # 2

1. Outcome Target

Number of producers indicating greater knowledge of market indicators affecting their marketing plan.

2. Outcome Type : Change in Knowledge Outcome Measure

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

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of producers using in-depth analysis/ration balancing.

2. Outcome Type : Change in Action Outcome Measure

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

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 # 4

1. Outcome Target

Number of producers growing alternative crops.

2. Outcome Type : Change in Action Outcome Measure

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

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 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 greatest external factor is the weak economy, creating budget cuts from state and federal sources.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Research projects will be peer reviewed, and published in appropriate scientific journals and lay publications. Research information will also be provided in oral presentations at a variety of meetings.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Climate Change

2. Brief summary about Planned Program

The planned program will conduct research and provide Extension information regarding the management and productivity of soil, land and animals in the face of climate change. This will help producers plan for and make decisions to adapt to changing environments. Proper management of the soil and natural resources is critical for the success of the small farm, and can increase farm profitability, and minimize harmful effects on the environment brought on by inappropriate management practices, such as overgrazing, over tillage and over application of soil nutrients.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	40%		40%	
132	Weather and Climate	10%		10%	
205	Plant Management Systems	10%		30%	
608	Community Resource Planning and Development	40%		20%	
	Total	100%		100%	

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

1. Situation and priorities

As the nature of changes in the earth's climate are becoming known, the impact of agricultural and social practices are becoming understood. At the very foundation of agriculture is the concept of managing carbon, which we are learning plays a large role in shifting temperatures, precipitation patterns, and agricultural productivity. Programs in this area will consider the interrelationship between natural resources and the environment.

2. Scope of the Program

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

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

1. Assumptions made for the Program

We assume that there will be an increase in scientific understanding of the causes of climate change, and that this growth in new knowledge will impact governmental and social policies. Furthermore, these policy shifts will lead to changes in agricultural production systems and natural resource management.

2. Ultimate goal(s) of this Program

The ultimate goal of this program is to foster environmental stewardship, civic engagement and entrepreneurship in a manner that reflects societal and governmental priorities regarding climate change.

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	13.8	0.0	45.5	0.0
2013	13.8	0.0	45.5	0.0
2014	13.8	0.0	45.5	0.0
2015	13.8	0.0	45.5	0.0
2016	13.8	0.0	45.5	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Homeowners, landowners and gardeners will be taught concepts of horticultural sustainability to reduce inputs and conserve natural resources. Create Extension civic engagement curriculum for community leaders and organizations, and promote leadership capacity to enhance civic activity within the community.

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 other than eXtension ● Other 1 (social media)

3. Description of targeted audience

Property owners, current and future community leaders, and entrepreneurs.

V(G). Planned Program (Outputs)

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

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

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

V(H). State Defined Outputs

1. Output Measure

- Number of stakeholders receiving information regarding sustainable consumer horticulture.
- Development and delivery of civic engagement "tool kit" curriculum to individual stakeholders.
- Number of individuals enrolled in "Managing Your Business" and "CORE FOUR" business planning courses.

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of strategic, business or marketing plans developed.
2	Total dollar value of strategic, business or marketing plans.
3	Number of people that take on new leadership roles
4	Number of stakeholders that improve consumer horticulture fertilizer, composting and soil nutrient practices.

Outcome # 1

1. Outcome Target

Number of strategic, business or marketing plans developed.

2. Outcome Type : Change in Action Outcome Measure

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

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Total dollar value of strategic, business or marketing plans.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:200000 2013:300000 2014:400000 2015:500000 2016:500000

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

Number of people that take on new leadership roles

2. Outcome Type : Change in Action Outcome Measure

2012:75 2013:100 2014:125 2015:150 2016:150

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

Number of stakeholders that improve consumer horticulture fertilizer, composting and soil nutrient practices.

2. Outcome Type : Change in Knowledge Outcome Measure

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

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 132 - Weather and Climate
- 205 - Plant Management Systems

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
- Other (high fuel prices)

Description

The greatest external factor is the weak economy, leading to reductions in state and federal support of Extension and Agricultural Experiment Station programs.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Research projects will be peer reviewed, and published in appropriate scientific journals and lay publications. Research information will also be provided in oral presentations at a variety of meetings.

Extension programs are in planning stages. Evaluation of these programs has not yet been determined.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Sustainable Energy

2. Brief summary about Planned Program

The planned program will conduct research and provide Extension information that fosters energy independence, the development of biomass use for biofuels, design of optimum forestry and crops for bioenergy production, and production of value-added bio-based industrial products. It will promote economically viable technologies for crop and livestock producers while maintaining quality environment for all citizens.

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
133	Pollution Prevention and Mitigation	30%		30%	
141	Air Resource Protection and Management	35%		35%	
403	Waste Disposal, Recycling, and Reuse	10%		10%	
511	New and Improved Non-Food Products and Processes	25%		25%	
	Total	100%		100%	

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

1. Situation and priorities

Biofuel holds great promise economically, environmentally and agriculturally. Two of every three rows of corn grown in South Dakota is used for biofuels. The biofuel industry has rapidly grown, and has become an established value-added industry. In a state long known for wind, the wind energy industry has recently become established. For the past five decades, South Dakota's hydroelectric dams have provided electricity to the Midwest. As new sources of energy become available, fossil fuels have become more expensive, in turn driving up expenses for families, businesses and communities. Programs in this area will include energy research, conservation, and application of new knowledge.

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

We assume that there will be an increase in scientific knowledge with respect to the development and application of new energy sources, specifically biofuels, and wind energy. Consumer demand will continue to drive the energy marketplace. Agricultural production systems will continue to adapt to these new opportunities.

2. Ultimate goal(s) of this Program

The ultimate goal of this program is to investigate new sources and new applications of renewable fuels, and to assist stakeholders in understanding and applying new energy knowledge.

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	11.5	0.0	4.9	0.0
2013	11.5	0.0	4.9	0.0
2014	11.5	0.0	4.9	0.0
2015	11.5	0.0	4.9	0.0
2016	11.5	0.0	4.9	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

South Dakota State University will conduct research in support of biofuel development, including new and adapted crop varieties. Extension will address energy conservation and efficiency, recycling and

air 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 ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● TV Media Programs ● Web sites other than eXtension ● Other 1 (social media)

3. Description of targeted audience

Homeowners, agricultural commodity group leaders with interests in biofuels, biofuels industry leadership.

V(G). Planned Program (Outputs)

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

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

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

V(H). State Defined Outputs

1. Output Measure

- Number of stakeholders receiving energy conservation information through consultation, workshops, displays and other methods.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of people reporting some form of energy conservation, such as adding insulation, caulking, etc.
2	Number of people that purchased an energy-saving appliance.
3	Number of home energy audits conducted

Outcome # 1

1. Outcome Target

Number of people reporting some form of energy conservation, such as adding insulation, caulking, etc.

2. Outcome Type : Change in Action Outcome Measure

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

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 people that purchased an energy-saving appliance.

2. Outcome Type : Change in Knowledge Outcome Measure

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

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of home energy audits conducted

2. Outcome Type : Change in Action Outcome Measure

2012:100

2013:100

2014:100

2015:100

2016:100

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

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

The weak economy, fostering reductions in state and federal funding, represents the greatest external factor.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

The listed evaluations are planned, but additional studies may be conducted as deemed appropriate by the scientists and/or Extension professional.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Childhood Obesity

2. Brief summary about Planned Program

The planned program will conduct research and provide Extension information to ensure that nutritious foods are affordable and available, and provide guidance so that individuals and families are able to make informed, science-based decisions about their health and well-being. South Dakota's youth effort will reach beyond obesity and include: health and safety, child care, family resilience and stability.

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
702	Requirements and Function of Nutrients and Other Food Components	0%		70%	
703	Nutrition Education and Behavior	20%		30%	
724	Healthy Lifestyle	20%		0%	
801	Individual and Family Resource Management	20%		0%	
802	Human Development and Family Well-Being	20%		0%	
806	Youth Development	20%		0%	
	Total	100%		100%	

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

1. Situation and priorities

According to the Centers for Disease Control, 20-24% of South Dakota's citizens are obese, and 56.5% are overweight. The USDA reports the following that the level of physical activity is also of concern with over 70% of the population exercising only one day a month and 38.8% four days a week. A study of South Dakotan's indicates: 17% eat enough vegetables, 27% eat enough fruit, 29% eat enough dairy

products, 43.6% consume greater than 10% of their fat from saturated fats, and 77% have a cholesterol intake of greater than 300mg.

Poverty can be a contributing factor to obesity. Poverty rates in South Dakota are among the highest in the United States, occurring largely in counties with a high percentage of American Indians. Of South Dakota's 66 counties, the following ten have the highest poverty rates: Ziebach, Shannon, Todd, Corson, Buffalo, Bennett, Mellette, Jackson, Dewey and Charles Mix. A majority of the citizens in each of these ten counties is American Indian.

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

We assume that obesity rates will continue to rise in all demographic portions of the state population. Weight management will be an issue for many adult South Dakotans. Education of children and parents provides the greatest opportunity to control childhood obesity and create the foundation for a healthy lifestyle.

2. Ultimate goal(s) of this Program

The ultimate goals of this program are to: to promote a healthy weight to reduce risk factors for chronic disease (Persons of all ages across SD), to improve access to healthy, affordable and safe food supplies, and to strengthen and enhance the partnership between the Expanded Food and Nutrition Education Program (EFNEP) and Family Nutrition Program (FNP) in order to expand the reach of low-income audiences served across SD.

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	25.0	0.0	10.9	0.0
2013	25.0	0.0	10.9	0.0
2014	25.0	0.0	10.9	0.0
2015	25.0	0.0	10.9	0.0
2016	25.0	0.0	10.9	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

South Dakota State University will conduct research and Extension programs to reduce childhood obesity, enhance lifelong health, and family resiliency.

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 ● One-on-One Intervention ● Demonstrations ● Other 1 (Scholarly publications) 	<ul style="list-style-type: none"> ● Newsletters ● TV Media Programs ● Web sites other than eXtension ● Other 1 (social media)

3. Description of targeted audience

Youth, parents, families, people living in poverty

V(G). Planned Program (Outputs)

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

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

V(H). State Defined Outputs

1. Output Measure

- Number of students who participate in KidQuest/school based nutrition programs.
 - Number of participants in Healthy Meals in a Hurry program
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of people that increased their frequency in using the food label to make food choices.
2	Number of people that adopted 1 or more practices to choose/consume healthier snack choices.
3	Number of people that adopted 1 or more healthy practices to healthy eating when dining out

Outcome # 1

1. Outcome Target

Number of people that increased their frequency in using the food label to make food choices.

2. Outcome Type : Change in Action Outcome Measure

2012:500 2013:600 2014:600 2015:700 2016:700

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle
- 801 - Individual and Family Resource Management
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of people that adopted 1 or more practices to choose/consume healthier snack choices.

2. Outcome Type : Change in Action Outcome Measure

2012:500 2013:600 2014:600 2015:700 2016:700

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle
- 801 - Individual and Family Resource Management
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of people that adopted 1 or more healthy practices to healthy eating when dining out

2. Outcome Type : Change in Knowledge Outcome Measure

2012:500 2013:600 2014:600 2015:700 2016:700

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle
- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

The greatest external factor that could negatively affect the outcomes is the reduction in state and federal funding. On the other hand, advancements in health-related findings such as the benefits of soy products in diets, new cures for cancer and heart disease, and the possibilities of new weight loss drugs could positively affect the outcomes.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

- Control/treatment studies to show impact of behavior change intervention
- Qualitative studies to learn about obesity

- Trials with mice (research design)
- Pre/post tests
- Dietary recall

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Food Safety

2. Brief summary about Planned Program

The planned program will conduct research and provide Extension information to reduce the incidence of foodborne illness and provide a safer food supply by addressing and eliminating causes of microbial resistance to contaminants, educating consumer and food safety professionals, and developing food processing technologies to improve safety. This program will span food development, processing, quality and delivery of food and non-food products in South Dakota and beyond our borders.

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	40%		35%	
502	New and Improved Food Products	10%		35%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	50%		30%	
	Total	100%		100%	

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

1. Situation and priorities

South Dakota is not isolated from the incidence of foodborne illness. The South Dakota State Epidemiologist has estimated that 200,000 South Dakotans experience a foodborne related illness each year. According to the Centers for Disease Control and Prevention, the incidence of several foodborne illnesses in South Dakota is higher than the national average, and several enteric diseases are increasing in numbers.

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

We assume that increased knowledge of safe food handling, preparation and preservation will address many of the current food safety issues.

2. Ultimate goal(s) of this Program

The ultimate goal of this program is to reduce the risk of foodborne illness associated with unsafe food handling at all levels of the food delivery system, from production to consumption.

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	8.3	0.0	15.5	0.0
2013	8.3	0.0	15.5	0.0
2014	8.3	0.0	15.5	0.0
2015	8.3	0.0	15.5	0.0
2016	8.3	0.0	15.5	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

South Dakota State University will conduct research and Extension programs to increase understanding of safe food handling, preparation and storage practices.

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● Demonstrations 	<ul style="list-style-type: none"> ● Newsletters ● TV Media Programs ● Web sites other than eXtension ● Other 1 (social media)

3. Description of targeted audience

Parents, food service workers and managers, consumers

V(G). Planned Program (Outputs)

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

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

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

V(H). State Defined Outputs

1. Output Measure

- Enrollment in food preparation certification courses in underserved areas of the state.
 - Number of workshops for high risk consumers in food handling and preservation.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of people that adopted 1 or more food preparation, storage, or preservation practices for increased access to a safe food supply

Outcome # 1

1. Outcome Target

Number of people that adopted 1 or more food preparation, storage, or preservation practices for increased access to a safe food supply

2. Outcome Type : Change in Action Outcome Measure

2012:150 2013:200 2014:250 2015:300 2016:300

3. Associated Knowledge Area(s)

- 501 - New and Improved Food Processing Technologies
- 502 - New and Improved Food Products
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

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 (fuel prices)

Description

The weak economy, influencing the amount of state and federal support.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

The evaluation plan will primarily focus on garnering needs of target audiences and identifying impacts. The evaluation plan will also address the outcomes identified.

