2008 University of Wyoming Combined Research and Extension Plan of Work

I. Plan Overview

1. Brief Summary about Plan Of Work

Agriculture is at a crossroads and faces many challenges and opportunities in the 21st century. Agriculture, as well as land-grant institutions, are challenged to compete in a global economy while still responding to the needs of a diverse U.S. population. Ensuring that agriculture remains profitable and sustainable, while addressing environmental concerns, places new demands on the industry. Issues involving production agriculture, natural resource management, and quality of life generate diverse research and education directives. Stakeholders have been vital in identification and prioritization of needs. Strategies emphasize the engagement of Wyoming's people to improve and develop relevant and applied research and extension programming. The College of Agriculture has a mission to serve the educational and information needs of students, Wyoming citizens and communities, and the global community by providing and distributing unbiased, scientifically sound information on production agriculture, natural resource management, and quality of life issues. The mission of the University of Wyoming Cooperative Extension Service is to provide lifelong learning opportunities for the people of Wyoming and empower them to make choices that enhance their quality of life. Livestock continues to be a major component of Wyoming's agriculture. Forage-based animal agriculture is the only basic industry found in all 23 Wyoming counties, and marketing of livestock and livestock products accounts for approximately 78 percent of statewide agricultural cash receipts. Grazing animals convert grass from rangeland and forage (including alfalfa and crop aftermath) from cultivated lands into marketable products, therefore filling a demand for human consumption. Technological changes in production and processing of agricultural commodities, along with changing consumer demands, are altering the markets for producers, processors, and consumers. In this new era of production, processing and environmental issues will be driven by consumer demands and concerns. It is important to remember that environmental problems, economic changes, diseases, and social trends are contained neither by state or international borders. Wyoming's geographic isolation provides no protection from broad global issues and influences. The people of Wyoming, particularly those in rural areas, have needs that demand knowledge and skills in the social and human sciences. Examples of these needs are divestiture of the federal governments responsibilities in human services, balances between environmental protection and economic development, child and youth development, workforce preparedness, maintaining and ensuring a quality food supply, adjustments to significant demographic changes such as aging populations and geographic population shifts, and an increased impact of global economics and issues on U.S. markets and communities. Planned programs for research and extension at the University of Wyoming reflect efforts in five initiative areas: Profitable and Sustainable Agriculture Systems (PSAS), Nutrition and Food Safety (NFS), Sustainable Management of Rangeland Resources (SMRR), 4-H and Youth Development (4-H), and Community Development Education (CDE).

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

Year	Extension		Research	
	1862	1890	1862	1890
2008	93.0	0.0	47.6	0.0
2009	93.0	0.0	47.6	0.0
2010	93.0	0.0	47.6	0.0
2011	93.0	0.0	47.6	0.0
2012	93.0	0.0	47.6	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 University Panel
- External Non-University Panel
- Combined External and Internal University Panel
- Combined External and Internal University External Non-University Panel
- Expert Peer Review

2. Brief Explanation

The merit review process for extension programs covers all programs conducted by UW CES. A team leadership model is utilized to review program plans and direction for CES programs as outlined in the 2003 UW CES Strategic Implementation Plan. Program initiative teams develop and review programs on an annual basis. Nine area external advisory teams comprised of stakeholders review CES programs annually. Teams make decisions to maintain, modify, or create new programs to meet the needs identified through external and internal stakeholder input. All projects supported with formula funds (Hatch, Multi-State, McIntire-Stennis, Animal Health) must be approved projects. The project proposal is transmitted to the department head and the head appoints a minimum of two internal scientific reviewers who are knowledgeable in the field to review the proposal. After a proposal is revised based on the above review, it is transmitted to the Experiment Station Director. The director's office assigns three external scientific reviewers who are knowledgeable in the field to review the proposal. The Wyoming Agricultural Experiment Station also administers an internal competitive grants program using a portion of its federal dollars. Proposals are reviewed by a ten member university-wide committee. Each proposal is also sent to a minimum of two external reviewers. The committee submits recommendations for project funding to the AES director.

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?

Faculty and CES specialists report multi-state and integrated activities through the UW College of Agriculture faculty update, cross-discipline activities, multi-state, and joint research have been common in the past, so these requirements are not new to Wyoming. Joint research can be audited through the projects that were at one time called regional projects. In UW's Plan of Work 2007-2011, Wyoming will commit 25 percent of its Hatch funds to the integrated activities; Extension has also committed 25 percent which are submitted annually. CES will annually conduct a survey of field educators to document multi-state activities. The strategic plan for the College of Agriculture calls for collaboration in all three functions, instruction, research, and outreach. To encourage multi-disciplinary and collaborative research efforts, the Wyoming Agricultural Experiment Station established a competitive grants program that emphasizes research across disciplines and colleges. Multi-disciplinary and integrated research efforts are quite common in the College of Agriculture. Over half of the research projects are integrated and the majority of those are multi-disciplinary. This is particularly true of the research efforts dealing with competitiveness and profitability of agriculture. Initiative teams formed as a result of the CES strategic plan have members representing CES educators, state specialists and faculty members, and UW College of Agriculture department heads. The intent of the initiative teams is to build communication and develop a more integrated program for research and extension. The CES strategic plan has identified five initiative areas which provide greater focus for extension personnel. Those initiatives redefined by stakeholders are Profitable and Sustainable Agriculture, 4-H/Youth Development, Nutrition and Food Safety, Rangeland Resources, and Community Development Education. The programs identified in the College of Agriculture's 5-Year Plan of Work address the critical issues of strategic importance for the state and region. These issues were identified through extensive input from research and teaching faculty, CES personnel, and college stakeholders during the college's strategic planning process. The five program initiatives listed in the 5-Year Plan of Work are consistent with those at the national level. Researchers at UW's College of Agriculture are involved in approximately 18 multi-state projects. The college's researchers have also been successful with research involving multi-institutions. A few specific examples include: research projects on Reproductive Performance in Domestic Ruminants; Certified Seed Production; Rural Communities & Public Lands in the West; Benefits & Costs of Natural Resources Policies Affecting Public & Private Lands; Steps to a New You; and Risk Management for Ag Families. There is also on-going multi-institution research programming through the R&E Centers. In addition, researchers have been successful in integrating research programs with various federal and state agencies and organizations.

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

All counties have targeted advisory meetings to gain stakeholder input on reaching limited resource audiences in the Cent$ible

Nutrition Program (EFNEP). County 4-H staff have established 4-H Expansion and Review committees to specifically address outreach efforts toward underserved youth audiences. In addition, the Research and Extension Centers located around the state have targeted under-represented populations to serve as members of advisory boards. Training has been provided for staff to encourage diversity in representation on advisory committees and in program planning. County personnel also utilize collaborative partners to learn needs within communities of the state. CES has partnered with the Natural Resource Conservation Service (NRCS) with representatives meeting quarterly to assess joint needs and work cooperatively in development and delivery of programs. Each of the four Research & Extension Centers has an advisory committee that meets annually. These advisory committees provide information on existing research and outreach programs and input regarding priority needs for research and outreach. Planned programs will incorporate stakeholder input on reaching underserved audiences in all planning and delivery efforts.

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

The programs describe the expected outcomes and impacts. Each program utilized a logic model in planning which clearly outlines expected outcomes and plans for evaluation. Each of the research faculty, educators, and specialists will write impact statements, some of which are used for the impact reporting to CSREES and others for county commissioners, state and national legislators, university administration, and clientele. The College's 5-Year Plan of Work describes the expected outcomes and impact for each of the five initiatives. Information concerning the expected outcomes and impacts is presented in an evaluative manner so that expectations have been made clear. Within each initiative outcomes concerning work with external agencies including multi-state and multi-institutions are also addressed and encouraged. By focusing on specific outputs and outcomes as identified within the plan, there will be more consistency in reporting program effectiveness. Through the college's strategic planning efforts there appears to be a more concerted effort to streamline research programs to address identified goals of the initiative teams. Research and extension personnel are seeking ways through the Plan of Work to work more closely together in order to address the needs of the state and region. As these efforts continue, the college can anticipate an improved effectiveness in its research and extension programs.

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

The College of Agriculture's research and extension efforts are focused in five initiative areas. Initiative teams include area and county educators, state specialists, and department heads which enable improved communication. State teams meet multiple times during the year to plan and develop interdiciplinary programs which address clientele needs. These efforts also encourage more integration between research and extension. The new Sustainable Agricultural Research and Extension Center (SAREC), located near Lingle, will allow for more efficiency of research efforts and dissemination of results to agriculture clientele. In 2006, the Laramie Research and Extension Center was established, which combined the animal science farms, the plant sciences green houses at UW, and the McGuire Ranch into an integrated crops and livestock research center.

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 individuals
- Targeted invitation to non-traditional stakeholder individuals
- Survey of the general public
- Survey specifically with non-traditional individuals
- Survey of traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Targeted invitation to traditional stakeholder groups
- Survey of selected individuals from the general public
- Survey specifically with non-traditional groups
- Targeted invitation to selected individuals from general public

Brief explanation.

Stakeholder input comes to the College of Agriculture Cooperative Extension Service and Agricultural Experiment Station through a variety of methods. A joint research and extension needs assessment process was completed in 2004. A stratified sample was used to determine program and research needs in the state. In addition to the mail survey, a phone survey was conducted with a

random sample of Wyoming residents. Both surveys also addressed preferred delivery methods by Wyoming citizens. Stakeholder input gathered through all methods is shared with faculty and CES initiative teams comprised of field educators, extension specialists, UW department heads, and administrators. Information is used in development of CES programs and applied research. This needs assessment is guiding development of the 2007–2011 plan of work. Initiative teams conduct surveys or use other methods to identify needs such as a small acreage homeowner survey to determine needs specific to that audience. All counties have had targeted advisory meetings to gain stakeholder input on reaching limited resource audiences in the Cent$ible Nutrition Program. County 4-H staff have established 4-H Expansion and Review committees to specifically address outreach efforts toward underserved youth audiences. Training has been provided for staff to encourage diversity in representation on advisory committees. County personnel also utilize collaborative partners to learn needs within communities of the state. Since 2004 CES and the Ag College has partnered with the Natural Resource Conservation Service (NRCS) with representatives meeting quarterly to assess joint needs and work cooperatively in development and delivery of programs. In 2007 UW CES will have a CSREES program review of the total extension system. Each of the four Research & Extension Centers has an advisory committee that meets annually. These advisory committees provide information on existing research and outreach programs and input regarding priority needs for research and outreach. The College of Agriculture maintains a separate statewide advisory committee. The committee meets annually to exchange information on the college's programs and to seek input of future concerns and issues. Three departments, Animal Science, Family and Consumer Sciences, and Veterinary Sciences, have separate advisory committees that provide input on programs in those departments.

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

Brief explanation.

CES advisory committees have formed in the nine Extension areas. These area advisory committees meet at least once annually to provide input on issues and program direction for CES. Advisory committee members are nominated by extension staff by subject matter interest. Selection to serve on advisory committees is based on gender, geographic representation, race, national origin, and underserved audiences. In addition, the Wyoming County Commissioners Association has formed an advisory committee of county commissioners who meet with the CES Director during quarterly meetings of their association. Research and Extension Center Advisory committees are represented by CES educators, industry leaders, and landowners (government and private) in all counties that they service. Advisory committee members are nominated by CES, AES, and administrative personnel and meet one to two times per year. In addition to these systematic methods of gathering stakeholder input, both AES and CES utilize both individual and groups throughout the state to identify relevant issues of critical importance. Just a few examples include: Commodity groups - such as Wyoming Wool Growers, Stock Growers, Wyoming Wheat Growers, Wyoming Crop Improvement Association, local and state nutrition councils, youth organizations such as Big Brothers, Big Sisters, School Districts. These groups and individuals provide input through both formal and informal discussions with both research and extension personnel. Faculty and CES specialists also gather relevant input from professional colleagues in Wyoming and across the nation.

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

Brief explanation

The College of Agriculture uses all reasonable efforts to gather input from stakeholders. Structured advisory meetings with both traditional and non-traditional stakeholder groups are held annually. Initiative teams, experiment stations and UW faculty will utilize a variety of methods to gather input which will be used to provide direction and evaluation of research and extension programs. Individual initiative and/or issue teams conduct needs assessments through surveys or meetings to gather stakeholder input on specific issues. The AES utilizes producer groups such as The Wyoming Crop Improvement Association; Wyoming Wheat Growers Association; Wyoming Stock Growers; and Wyoming Wool Growers for input on research needs for Wyoming agriculture. The CES personnel across the state utilize local government, organizations, agencies, and citizens to identify individual county and area needs.

3. A statement of how the input will be considered

- Redirect Research Programs
- To Identify Emerging Issues
- In the Action Plans
- To Set Priorities
- Redirect Extension Programs
- In the Staff Hiring Process
- In the Budget Process

Brief explanation.

Stakeholder input is used by AES and CES initiative teams to identify emerging issues. Input gathered is used in program planning, evaluation of current programs, and redirection of programs when applicable. Stakeholder input from area advisory groups, county commissioners, and area teams assist in staffing priorities. Search committees comprised of local stakeholders provide input on screening, interviewing and hiring decisions for CES. Input from all sources is in development, implemtation, and evaluation of extension and research programs.

V. Planned Program Table of Content

V(A). Planned Program (Summary)

1. Name of the Planned Program

4-H and Youth Development

2. Brief summary about Planned Program

4-H is the Cooperative Extension System's dynamic educational program for today's youth. Through a program delivery system which includes all 23 counties in Wyoming as well as the Wind River Indian Reservation, 4-H presents a strong, positive image challenging young people to prepare for their future roles as leaders. Adult volunteer leaders are a key to success in the 4-H program. Trained leaders provide support and training to members in local clubs. Recruitment, training, and management of volunteers is a major thrust of the 4-H youth development program.
Youth in the traditional 4-H program have the opportunity to expand their knowledge base, increase their life skills and develop leadership abilities in order to become responsible, contributing citizens. This type of impact will improve the overall quality of life in Wyoming.
Wyoming is not immune to high-risk behaviors among its youth. The current 4-H program will benefit by offering life skills education to non-traditional audiences. While 4-H projects and clubs remain the backbone of UW CES, youth development efforts, additional youth can be reached through collaboration with other community youth groups and non-traditional delivery methods.

3. Program existence : Mature (More then 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

- 801 10% Individual and Family Resource Management
- 802 25% Human Development and Family Well-Being
- 806 65% Youth Development

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

1. Situation and priorities

In Wyoming there are an estimated 75,000 youth between the ages of 8 and 18 according to the U.S. Census Bureau. Of those youth, 6,942 are enrolled in the traditional club program. The main focus of 4-H is the development of life skills, knowledge and leadership. According to the Search Institute “youth who have ten or fewer of the 40 external and internal assets are at high risk of developing at-risk behaviors”. All of the 40 external and internal assets are likely to be developed by youth involved in the 4-H program. Youth in the traditional 4-H program have the opportunity to expand their knowledge base, increase their life skills and develop leadership abilities in order to become responsible, contributing citizens. This type of impact will improve the overall quality of life in Wyoming. Adult volunteers are critical to implementing and expanding the youth development efforts of CES.
This leaves 68,058 youth in the state of Wyoming who are not being served by the traditional club 4-H club program.
Non-traditional youth development programs will target youth with focus on the development of life skills and values.

2. Scope of the Program

- In-State Extension

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

1. Assumptions made for the Program

The 4-H and Youth Development program has the following assumptions: 1.) Volunteers care about kids 2.) Volunteers want to be involved with kids 3.) Volunteers are safe, responsible, and caring adults 4.) Resources are available to make the situations of the logic model happen 5.) Adults will engage with Extension Staff.
Assumptions made for the traditional 4-H/youth program include: • Partnerships will be formed. • Public entities will cooperate. • Colleagues will receive educational programming. • External funds will be sought.

Assumptions for non-traditional 4-H programs: Partnerships can be formed. • Funds will be available. • Schools will open their doors. • Adults will volunteer. • Governing bodies will cooperate.

2. Ultimate goal(s) of this Program

Trained adult volunteers have skills and abilities in which they are able to foster youth to become responsible productive adults. Youth in the traditional 4-H program have the opportunity to expand their knowledge base, increase their life skills and develop leadership abilities in order to become responsible, contributing citizens. This type of impact will improve the overall quality of life in Wyoming.

Through a variety of alternative teaching methods, the non-traditional 4-H program is designed to motivate underserved and high risk youth to become involved, serve as leaders, and become responsible, productive adults.

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2008	29.0	0.0	0.0	0.0
2009	29.0	0.0	0.0	0.0
2010	29.0	0.0	0.0	0.0
2011	29.0	0.0	0.0	0.0
2012	29.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Activities include volunteer training on the following topics: Ages and stages of youth; Risk Management;Youth Development Concepts;Non-Profit Management/Coordination; Financial Management/IRS Issues;Project Training;Learning Styles;Club Maintenance;Recruitment and Retention.

Traditional 4-H will focus on project or leadership activities; teach and/or facilitate educational programs; recruitment of new members, training, camps, clinics, contests, media, and assessment.

Non-traditional 4-H activities will include: Cloverbuds (pre 4-H); Affter school programs; School enrichment; Youth Leadership; Marketing; and Camps.

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

Extension	
Direct Methods	Indirect Methods
• One-on-One Intervention • Education Class • Demonstrations • Workshop • Group Discussion • Other 1 (Camps)	• Newsletters • Public Service Announcement • Web sites

3. Description of targeted audience

The University of Wyoming College of Agriculture is committed to reaching underrepresented groups and individuals and to implementing the objectives of equal opportunity regulations relative to the consideration and treatment of clientele for participation in Extension programs regardless of their race, national origin, gender, age, religion, or disability. 4-H Volunteers will be recruited from the following groups: Adults in the Community, Other Agencies, Civic Groups,Youth Groups, and the General Public.

Traditional 4-H youth audiences will target: • Youth • Volunteers • Families • Community.

The target audience for non-traditional 4-H will include: Underserved and high risk youth who do not participate in the traditional 4-H Youth program in Wyoming.

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
2008	3000	5000	7000	10000
2009	3000	5000	7000	10000
2010	3000	5000	7000	10000
2011	3000	5000	7000	10000
2012	3000	5000	7000	10000

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 **2009 :**0 **2010 :**0 **2011 :**0 **2012 :**0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	0	0
2009	0	0
2010	0	1
2011	0	1
2012	0	1

V(H). State Defined Outputs

1. Output Target

- Number of youth enrolled in the traditional 4-H program. Target is number of youth enrolled.

  2008 :7000 **2009 :**7000 **2010 :**7500 **2011 :**7500 **2012 :**8000

- Number of educational events, camps, training workshops, clinics implemented. Target is number of programs and events.

  2008 :100 **2009 :**100 **2010 :**100 **2011 :**200 **2012 :**200

- Number of volunteers enrolled as leaders in the 4-H program. Target is number of volunteers.

  2008 :3000 **2009 :**3000 **2010 :**3000 **2011 :**3000 **2012 :**3000

- Number of volunteers participating in formal training programs. Target is number of volunteers.

  2008 :600 **2009 :**800 **2010 :**800 **2011 :**1000 **2012 :**1000

- Number of non-traditional programs established. Target is number of programs.

2008 :10 **2009 :**10 **2010 :** 15 **2011 :**20 **2012 :**20

- Number of youth enrolled in non-traditional youth development programs. Target is number of youth.

2008 :5000 **2009 :**5000 **2010 :** 7000 **2011 :**10000 **2012 :**10000

V(I). State Defined Outcome

1. Outcome Target

Increased knowledge, skills, self-esteem, awareness, motivation, belonging, and diversity. Target is number of youth participating.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :1000 **2009 :** 1000 **2010 :** 1000 **2011 :**2000 **2012 :** 2000

3. Associated Knowledge Area(s)

- 806 - Youth Development

1. Outcome Target

Wyoming youth will acquire knowledge which builds life skills including critical thinking, public speaking, teamwork, self-discipline, responsibility, decision making, self-esteem, communication, and leadership. Target is number of youth reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :1000 **2009 :** 1000 **2010 :** 2500 **2011 :**2500 **2012 :** 3000

3. Associated Knowledge Area(s)

- 806 - Youth Development

1. Outcome Target

Youth will be empowered to make logical decisions, develop a positive behavior (according to traditional values), effectively communicate, and establish a working relationship with others. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :1000 **2009 :** 1000 **2010 :** 1000 **2011 :**2500 **2012 :** 2500

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being
- 806 - Youth Development

1. Outcome Target

Wyoming youth build assets and essential life skills to lead productive, responsible, and healthy lifestyles. Target is number of participants reporting outcome.

2. Outcome Type : Change in Action Outcome Measure

2008 :500 **2009 :** 500 **2010 :** 500 **2011 :**1000 **2012 :** 1000

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being
- 806 - Youth Development

1. Outcome Target

Decreased incidence of youth engaging in high risk behavior. Youth become responsible, productive adults. Target is number of participants reporting outcome.

2. Outcome Type : Change in Condition Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
100	500	500	1000	1000

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being
- 806 - Youth Development

1. Outcome Target

Non-traditional youth participating in programs serve in leadership roles, serve on governing bodies, act as mentors, and teach other youth. Target is number of participants reporting outcome.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
50	100	100	200	200

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being
- 806 - Youth Development

1. Outcome Target

Volunteers demonstrate increased knowledge in project areas. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
200	200	500	500	1000

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being

1. Outcome Target

Volunteers become key players in 4-H and youth development programs. Target is number of participants reporting outcome.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
100	100	200	200	500

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being

1. Outcome Target

Volunteers demonstrate knowledge of youth development principles. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
200	200	500	500	1000

3. Associated Knowledge Area(s)

- 806 - Youth Development

1. Outcome Target

Volunteers will learn and apply the experiencial learning model. Target is number of participants reporting outcome.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
100	200	300	300	500

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being
- 806 - Youth Development

1. Outcome Target

Trained adult volunteers will demonstrate skills and abilities in which they are able to foster youth to become responsible adults. Target is number of participants reporting outcome.

2. Outcome Type : Change in Condition Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
100	100	200	500	500

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being
- 806 - Youth Development

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Competing Public priorities
- Appropriations changes
- Populations changes (immigration,new cultural groupings,etc.)
- Public Policy changes
- Competing Programatic Challenges
- Other (background of participants)
- Natural Disasters (drought,weather extremes,etc.)
- Government Regulations

Description

Funding for youth development is necessary for the program. Most youth educator positions in counties are jointly funded by county government. Youth and adults face time allocation challenges.
Factors that may affect programs and results include natural disasters, economy, demographic patterns, public policy changes, background and experiences of participants, government regulations and competing public priorities. Each of these affect communities and families.
Public policy and competing public priorities could impact youth development programs; specifically the ability to work with schools to implement school enrichment or after school programs. Population changes impacting the number of school age youth in communities could impact program direction.

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

1. Evaluation Studies Planned

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

Description

Use and adopt the "Life Skills Evaluation Model" for evaluation of youth development programs.
A variety of methods will be used to evaluate programs within 4-H and youth development. Age of participant and length of activity with be factors considered in determining methodology for evaluation. Youth educators will utilize pre- and post-test, end of session surveys, follow-up surveys by phone, e-mail, mail, on-site; observation, case study, sampling and interviews that are either structured or unstructured.

2. Data Collection Methods

- On-Site
- Case Study
- Sampling
- Mail
- Observation
- Tests
- Telephone
- Portfolio Reviews
- Whole population
- Unstructured

Description

Evaluation of total participants at some educational activites. On-site, mail, or telephone surveys may be used to gather impact data. Unstructured interviews with volunteers will be used to determine impact. Pre and post tests, and observation will also be utilized in evaluation to the 4-H youth and volunteer managment program. In addition, teacher reports may be used when implementing non-traditional youth programs.

V(A). Planned Program (Summary)

1. Name of the Planned Program

Community Development Education

2. Brief summary about Planned Program

The socioeconomic viability of families in Wyoming is central to the work of the Community Development Education (CDE) initiative team of the University of Wyoming Cooperative Extension Service. This plan reflects the relatively new arrangement of self-organized teams of educators, specialists, and faculty to address state issues. The CDE team delivers programming on the topics of community development, family resource management and entrepreneurship. The CDE initiative team is building on past work to offer more targeted programming given its resources.

Wyoming residents face numerous challenges -- energy development impacting communities lacking adequate infrastructures, expanding growth in some areas and declines in others, aging population, declining youth population, workforce housing and development, land use, and more. Based on the research of Flora, Flora and Fey (2004) to uncover characteristics of successful communities, the community capitals framework was developed as an approach to analyze communities. They found that the most successful, healthy, and sustainable communities paid attention to seven types of capital: natural, cultural, human, social, political, financial and built capitals. This approach focuses on identifying community capitals and the interactions between these seven capitals. The following is a list of the seven community capitals and defining characteristics. •Natural Capital: air quality, land, water and water quality, natural resources, biodiversity and scenery. •Cultural Capital: religions, values, heritage recognition and celebration. •Human Capital: population, education, skills, health, creativity, youth, diverse groups. •Social Capital: trust, norms of reciprocity, network structure, group membership, cooperation, common vision and goals, leadership, depersonalization of politics, acceptance of alternative views, diverse representation. •Political Capital: level of community organization through the use of government; ability of government to garner resources for the community. •Financial Capital: tax burden/savings, state and federal tax monies, philanthropic donations, grants, contracts, regulatory exemption, investments, reallocation, loans, poverty rates. •Built Capital: housing, transportation, infrastructure, telecommunications infrastructure and hardware, utilities, buildings. Through relevant educational programming, UW Cooperative Extension can impact the three base blocks in Wyoming communities and can help grow several of the “capitals” identified in the Flora, Flora and Fey research to help sustain rural communities. The vision for this program area is to facilitate the creation of sustainable rural communities throughout Wyoming.

A profitable, sustainable, and globally competitive rural sector is essential for the well-being of Wyoming communities, households, and social structure. Effective new venture development is a key component in attaining this. Through the implementation of this program, Wyoming's opportunity for businesses, particularly for new ventures, will be improved.

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

- 601 5% Economics of Agricultural Production and Farm Management
- 602 5% Business Management, Finance, and Taxation
- 604 5% Marketing and Distribution Practices
- 608 50% Community Resource Planning and Development
- 801 25% Individual and Family Resource Management
- 802 5% Human Development and Family Well-Being
- 803 5% Sociological and Technological Change Affecting Individuals, Families and Communities

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

1. Situation and priorities

In the last ten years Wyoming has experienced significant economic growth stemming from its natural resources of gas, oil, and coal. While jobs in the energy sector often pay well, most residents hold service sector positions that are typically low paying and

are often seasonal. Sound financial management will increase the stability and security of households as well as the happiness of household members. The first critical need is the management of credit and debt. Seven out of 10 low and middle income households report using their credit cards as a safety net. In Wyoming about 2,500 people file for bankruptcy protection each year. The second critical issue is the spending habits of adolescents. Many adolescents earn income, of which they spend 98 percent, and do not have to pay for many living expenses such as housing. The third critical issue is improving the financial health of Wyoming households. Information collected from UW Cooperative Extension Service Area Advisory Committees in 2004-2005, identified retirement planning, consumer decision making skills, estate planning and family resource management as the top issues in the state.

Leadership development was identified as a need by the Wyoming Rural Development Council's Community Assessments. This was later reaffirmed by Area Advisory Committees in 2004-2005 and the Extension Research Needs Assessment in 2004. The Wyoming Business Council has shared their vision of community economic development using a building block model. At the base are three blocks – leadership development, workforce development, and community capacity building. The second level has two blocks, existing business development and entrepreneur development, and one block on the top for recruiting.

Wyoming is vulnerable because of its historical dependence on agriculture and extraction industries, coupled with its sparse population. Thus diversification is imperative for the survival of many communities. Extension provides educational offerings, resources and referrals designed to help existing and potential entrepreneurs enhance their prospects for success. Specific areas of emphasis are small businesses, especially in rural areas; new opportunities in entrepreneurial agriculture and natural resource enterprises (e.g., agritourism); and the strong and growing interest in entrepreneurship among youth and young adults, women, ethnic minorities, and immigrants. Management, financing and business diversification are areas essential for helping clients establish, maintain, and enhance their businesses. Information collected from Area Advisory Committees in 2004-2005 identified family business and entreprenurship as an important issue within the state.
The federal government manages a significant amount of the land area in the Western United States. In Wyoming, the Forest Service, Bureau of Land Management, National Park Service, Bureau of Reclamaition, and Fish and Wildlife Service control 29.8 million acres or about one-half of the land surface area of the state. Due to its large land holdings, management decisions by federal land management agencies can have significant impacts on the economies and lifestyles of communities in Wyoming. Researchers are working with Wyoming communities, assisting them with identifying impacts of change, developing community network resources, and identifiying growth opportunities for existing businesses. Multistate projects interface retailers, small manufacturers, and home-based businesses; helping these businesses identify economic development and growth opportunities in their rural locations.

2. Scope of the Program

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

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

1. Assumptions made for the Program

The following assumptions are made about this planned program and the people involved. 1.) The program effects cannot be achieved without the partnership and collaboration of organizations, teachers and trainers who reach target audiences. 2.) Teachers will use video segments of financial resource management within their curriculums. 3.) The necessary resources will be made available. 4.) Leadership/gatekeepers will allow collaborations. 5.) Media outlets to be available for Extension programming throughout the state. 6.) Funding will be available to provide resource material at affordable prices and pay for use of technology time. 7.) Funding for research on household credit use is received.

Communities will continue to change and need to deal with change. Informed and trained community leaders and publics affect desired change. The College of Agriculture is positioned to provide education and research to assist community leaders and publics. Wyoming CES has the expertise and resources to provide training and education to communities in necessary processes. Research efforts are designed to focus on community and economic analysis and improving efficiency to capture and retain dollars whether in the form of existing or new ventures. However, these resources are limited and scarce and will need to be leveraged with other resource sources, partnerships and collaborations. Extension alone cannot address complex community issues. It takes multiple disciplines, expertise, available research, manpower and more. Extension can assist in addressing issues by sharing relevant research and expertise as well as providing educational programs that prepare people to participate and lead in addressing community issues. Wyoming communities will accept and use leadership and education from UW CES to increase

their ability to deal with community issues. It is also assumed that many communities will need to be educated or informed as to the resources and expertise that UW CES can bring to bear and the potential benefits of embracing such training, collaboration, and facilitation. Leadership is a shared responsibility throughout communities. In-depth training will increase skills, knowledge and confidence of participants. Trained participants will tackle organizational, business and community issues to sustain rural communities.

The University of Wyoming Cooperative Extension is positioned to provide research based education to its clientele. Programming in entrepreneurship is one of three objectives of the Community Development Education Initiative, with limited staff; resources brought to bear on this objective will be limited.
Reseach efforts will provide solid economic information to help reduce the emotionalism associated with discussions regarding the management of Federal land.

2. Ultimate goal(s) of this Program

The CDE program has three focus areas with the following objectives:
1) The performance goal is to increase the general financial literacy and fiscal responsibility of residents. 2) To facilitate the creation of sustainable rural communities throughout Wyoming. Ultimately, there will be stronger, more effective partnerships and collaboration within and between communities, as well as improved problem-solving, decision-making, group process skills, and leadership in community members, youth, workforce development, and the volunteer base. And 3) Decision-makers and enterprises will gain expertise to make better economic decisions, diversify economic activities, manage resources, and develop effective financial plans. This in turn will help vitalize rural communities and the well-being of individuals, issues of primary importance in Wyoming. 4) Research based information improves the decision making process by providing decision makers with more reliable and credible information on which to base their decisions.

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
2008	11.0	0.0	2.1	0.0
2009	11.0	0.0	2.1	0.0
2010	11.0	0.0	2.1	0.0
2011	11.0	0.0	2.1	0.0
2012	11.0	0.0	2.1	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Educational and research activities and efforts of the CDE program include:

Development of models to explain the impact changes have on the ability of communities to capture and retain dollars such as the impact of eliminating snowmobiling in Yellowstone National Park or the impact of reducing grazing permits in Bridger Teton National Forest.
Family resource management programs will reach out to a broad spectrum of constituents throughout Wyoming using a variety of anticipated programs. Outputs include methods such as train-the-trainer workshops, home-study courses, and such approaches as the Internet (www.uwyo.edu/CES/FRM/), and satellite. Also included are publications, meetings, news releases, and feature articles.

Community-based leadership training institutes – (EVOLVE) Extension Volunteer Organization for Leadership Vitality and Education. Skill training workshops – i.e. board training. General public information and educational efforts – i.e. public media materials; information/educational meetings and workshops; books, booklets, bulletins, training materials; providing data. Facilitation of community processes. Analyses of community data and economic impact. Assessments to identify individual

strengths and areas to be strengthened to guide personal development and grow talent. Media resources to promote community capital development Extension education and increase awareness of Extension resources.

Outputs for entrepreneurship programs include publications, meetings, classes, workshops, conferences, one-on-one consultations, and web sites.
Research efforts will include economic analysis of Federal land management planning. These efforts provide important information that is used to assist in the planning process to make decisions that are critical to the future of Wyoming.

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

Extension	
Direct Methods	**Indirect Methods**
• Other 1 (Webex) • Workshop • Group Discussion • One-on-One Intervention • Education Class • Other 2 (Scientific Presentations)	• Other 2 (Home Study Courses) • Other 1 (News releases/features) • Newsletters • Web sites

3. Description of targeted audience

The University of Wyoming College of Agriculture is committed to reaching underrepresented groups and individuals and to implementing the objectives of equal opportunity regulations relative to the consideration and treatment of clientele for participation in programs regardless of their race, national origin, gender, age, religion, or disability. The ultimate consumer of the educational products for financial management programs will be all individuals (including youth and senior citizens), families (including low-income families), and in general people at risk of experiencing financial stress. The group of educators, specialists, and faculty responsible for leading and delivering the outputs in the program is the smallest of the University of Wyoming's Cooperative Extension Service groups. A priority for program development is to use methods of information and instruction that make it possible for the most constituents to be assisted while minimizing face-to-face work. Thus the team will emphasize train-the-trainer courses, newsletters, and electronic delivery of information and programming.

Targeted audiences for leadership development include: Elected officials. Members and leaders of formal and informal community organizations. Faith-based leaders and members. Business owners/managers/employees. Trade/produce groups. Educational entities. Federal/state/local agency leaders/members.

Entrepreneurship programs targets audiences who will manage or may develop ventures relating to food and agricultural systems, a non-farm extension of a farm business, forestry, home trades, crafts, services, etc. Other audiences through which Wyoming CES program may be delivered include: teachers, public and private agencies, business owners/managers/employers, trade/produce groups, educational entities, identified publics, youth groups/students, and small acreage owners.

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
2008	500	2000	200	1000
2009	500	2000	200	1000
2010	500	2000	200	1000
2011	700	2000	200	1000
2012	700	2000	200	1000

2. (Standard Research Target) Number of Patents

Expected Patents

2008 :0 **2009 :**0 **2010 :** 0 **2011 :**0 **2012 :**0

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	2	1
2009	2	1
2010	2	1
2011	2	1
2012	2	1

V(H). State Defined Outputs

1. Output Target

- Family Resource Management programs will ultimately benefit all families in Wyoming. Short term effects may be increased grant funding and increased involvement in regional and multi-state projects.Target is number of programs.

  2008 :0 **2009 :**1 **2010 :** 1 **2011 :**1 **2012 :**1

- Number of individuals participating in programs. Target is number of individuals.

  2008 :250 **2009 :**300 **2010 :** 500 **2011 :**500 **2012 :**500

- Number of programs delivered. Target is number of programs.

  2008 :25 **2009 :**25 **2010 :** 30 **2011 :**30 **2012 :**30

- Entrepreneurship output targets include: number of individuals assisted.

  2008 :5 **2009 :**5 **2010 :** 10 **2011 :**10 **2012 :**20

- Participation in entrepreneurship programs designed for specific audiences including beginning farmers, multi-generation farm families, part-time farmers, and existing farmers. Target is number of participants.

  2008 :20 **2009 :**30 **2010 :** 50 **2011 :**50 **2012 :**50

- Research efforts will include community economic analysis which includes improving efficiency of existing firms, improve efficiency to capture and retain dollars and attract new businesses. Targets show number of projects.

  2008 :1 **2009 :**1 **2010 :** 2 **2011 :**2 **2012 :**2

V(I). State Defined Outcome

1. Outcome Target

Permanent changes in practices as determined by follow-up surveys with those attending meetings, events, and workshops. Target is number of participants.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :50 **2009 :** 50 **2010 :** 100 **2011 :**100 **2012 :** 100

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices
- 608 - Community Resource Planning and Development
- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities

1. Outcome Target

Financial stability and security in Wyoming households. Target is number of households.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
0	50	100	100	200

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Improved quality of life for participants through adoption of management principles. Target is number of participants reporting outcome.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
0	0	100	100	100

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation
- 801 - Individual and Family Resource Management

1. Outcome Target

One or more management principles from educational programs on personal finance management are adopted by workshop participants. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
25	25	50	100	100

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Wyoming schools will increase awareness of UW CES as a source of financial management curriculum. Target is number of schools contacted.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
25	50	50	50	50

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Improved credit debt-management skills reported by participants in workshops. Target is number of participants reporting

outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
25	25	50	50	50

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Increased public interest in personal finance as determined by attendance at meetings, workshops, events, and demonstrations. Target is number of participants.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
100	100	100	100	100

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Knowledge and confidence gained as measured by end of workshop evaluations. Target is number of participants.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
50	100	100	100	100

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

1. Outcome Target

Participants of leadership classes will develop skills and confidence necessary for community participation, find resources to enhance community capital, recognize the needs for community vision, capacity building, and direction, and strengthen inner-community relationships. Target is number of participants.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
100	100	100	100	100

3. Associated Knowledge Area(s)

- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities

1. Outcome Target

Leadership participants will be able to utilize collaborative/coalition building practices to implement visionary community programs in order to provide the community with leaders, officials, and volunteers who are able to affect desired change or stability. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
10	25	25	50	50

3. Associated Knowledge Area(s)

- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities

1. Outcome Target

Increased rural economic diversification. Target is number of participants implementing change.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
0	0	5	5	5

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices

1. Outcome Target

Enhanced incomes and jobs through business expansion or new businesses. Target is participants reporting outcome.

2. Outcome Type : Change in Condition Outcome Measure

2008 : 0	**2009 :** 0	**2010 :** 5	**2011 :** 5	**2012 :** 5

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices

1. Outcome Target

Long term changes in action documented through follow-up surveys of program participants regarding planning, improved management of risk, insurance, and labor. Improved confidence and ability to market, produce and finance, and promote products from new enterprises. Target is number of participants reporting outcome.

2. Outcome Type : Change in Condition Outcome Measure

2008 : 0	**2009 :** 2	**2010 :** 2	**2011 :** 5	**2012 :** 5

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices

1. Outcome Target

Short term outcome of research efforts include increased grant funding and increased involvement on regional and mulit-state projects. Target is numbe of projects.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 : 1	**2009 :** 1	**2010 :** 2	**2011 :** 2	**2012 :** 2

3. Associated Knowledge Area(s)

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

1. Outcome Target

Development of impact models which will improve community economic analysis as well as mitigate unwanted consequences. Target is number of impact models developed.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 : 1	**2009 :** 2	**2010 :** 2	**2011 :** 2	**2012 :** 2

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 604 - Marketing and Distribution Practices
- 608 - Community Resource Planning and Development

- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Other (changes in technology)
- Economy
- Competing Programatic Challenges
- Competing Public priorities
- Government Regulations
- Public Policy changes
- Populations changes (immigration,new cultural groupings,etc.)
- Appropriations changes

Description

Factors external to the College of Agriculture that will influence programs and results include: formation of collaborations; a shift in demographics; a shift in state and regional economic situations; shifts in local, state, university, and national policy, and changes in technology. External factors which can affect leadership activities include competing public priorities which affect participation; competing programatic challenges and limited resources. Many communites are under pressure to deal with multiple changes/issues. A significant portion of community members often resist such change or choose to ignore it. Resources will continue to be scarce and may diminish. This is only one of three objectives of the CDE initiative team and CDE team is only one of five UW CES SIT teams. Consequently, UW CES resources brought to bear on this objective will be limited. Leadership training has become a popular subject of concern across the nation, which increases the opportunity and need for UW CES programming, but also increases the competition from other sources offering leadership training and community facilitation.

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)

Description

Efforts to evaluate programs will include: 1.) Pre- and post-tests regarding knowledge and skills gained by participants, 2.) Post-meeting/workshops evaluations and tests of program participants, and 3.) Follow-up surveys of educators and community organizations. For family resource management educational programs and activities, the following skills will be measured to determine impacts achieved. These are the management principles by which immediate and intermediate outcomes will be evaluated. 1.) Communication—information is shared in a timely way, active listening, variety of communication methods used, expresses ideas clearly. 2.) Problem Solving—problem defined, criteria developed, alternative solution explored and evaluated, solution chosen and monitored. 3.) Decision Making—methods of decision-making are defined and understood by those involved. Examples include compromise, consensus, majority, one-man rule or spontaneous agreement. 4.) Goal Achievement—clearly defined goals, planning processes used to establish a course of action, progress made towards goal achievement, priority setting. 5.) Financial Skills—financial goals established, plans for managing debt and/or savings, record keeping utilized, fiscal control, financial security. In general, efforts will occur to assess the effectiveness of individual programs by the CRD Initiative team each year during the autumn.

For entrepreneurship educational programs and activities, the following methods will be used to determine effects achieved: 1.) Tracking of community interest and contact development, 2.) Program evaluation forms, 3.) Social capital surveys – pre and post where interventions are long-term, 4.) Interviews with key stakeholders.

2. Data Collection Methods

- Other (Focus groups)
- Tests
- Sampling
- Unstructured
- Whole population
- Mail
- On-Site

Description

Leadership institutes will use end of session questionnaires with Likert scales and open-ended questions. A post-test online survey (or hard copy) developed by Dr. Kenneth Pigg, University of Missouri Extension Sociologist, administered six to twelve months after completion of intensive leadership training. Focus groups may be used to determine impact.
Efforts to evaluate financial management programs include: pre- and post-tests regarding knowledge and skills gained by participants. Post meeting/workshop evaluations and test of program participants, and follow-up surveys of educators and community organizations.

V(A). Planned Program (Summary)

1. Name of the Planned Program

Nutrition and Food Safety

2. Brief summary about Planned Program

CES's Dining with Diabetes program addresses Type 2 diabetes, the most common metabolic disease in the world. In the US alone, the associated health care cost exceeds $130 billion per year. Many studies have demonstrated that with proper nutrition and consistent physical activity habits, Type 2 diabetes can be delayed, controlled, or even prevented. The program modeled after the Dining with Diabetes program started in West Virginia, includes a series of classes which cover nutrition, physical activity, food demonstrations, and sampling of healthy, tasty food. Research will focus on fetal nutrient deficiency in human pregnacy which occurs due to a variety of situation, such as maternal malnutrition, reduced placental efficiency, adolescense pregnancy, closely spaced pregnancy, pregnancy with multiple fetuses and hyperemesis gravidarum, which has long-term consequences for offspring health, including high incidences of obesity and type 2 diabetes. Much of this research is being done with model systems using sheep and is a collaborative effort involving scientists from several states and different colleges. The health of our citizens is greatly influenced by their food choices and degree of physical activity. Rising rates of obesity and overweight among adults and children – resulting from poor nutrition and physical inactivity – increase their risk of chronic disease. Negative body image also contributes to poor nutrition and inactivity among many individuals. The UW Cooperative Extension Service faces challenges in addressing program priorities and actions that must address the changes ocurring in the United States today. The orientation of food and nutrition research and education are addressed toward health priorities. High-quality educational and research programs have the potential to affect food behavior and to help promote health of Wyoming residents.
Microbial contamination of food is a serious public health problem: Each year in the U.S., food-borne diseases cause approximately 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths. With approximately 60% of food-borne illness outbreaks nationwide attributable to food-service establishments, food-service personnel are key to reducing the risk of food-borne illness. Additionally, home food preparers and consumers are important groups to reach with food safety education because their behaviors greatly affect the safety of food that they serve to others and/or eat themselves. USDA grants helped establish the Wyoming Food Safety Coalition (WFSC). For over 10 years WFSC has involved a partnership between UW CES, Wyoming Department of Agriculture, Department of Health and local environmental health specialists to deliver food safety training to food service personnel; schools; and consumers. The college is currently developing new, faster, more accurate, techniques for detection of E. coli and listeria contamination in food animal products.
In Wyoming the Extension Food Nutrition Education Program (EFNEP) is integrated with the Food Stamp Nutrition Education Program (FSNP) to form the Cent$ible Nutrition Program. EFNEP is in two counties, Natrona and Laramie.

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

- 703 50% Nutrition Education and Behavior
- 704 10% Nutrition and Hunger in the Population
- 712 20% Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxins
- 724 20% Healthy Lifestyle

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

1. Situation and priorities

Wyoming residents are at risk as reflected by various health-related data: For example, over 20 percent of Wyoming adults report no leisure time physical activity, 47 percent of Wyoming high school students report not being enrolled in a physical education class, and 78 percent of both Wyoming adults and high school students do not eat recommended amounts of fruits and vegetables. Additionally, research in Wyoming, Montana, and Idaho documented body dissatisfaction as a significant predictor of self-consciousness keeping respondents from participating in physical activity.

Rates of diabetes are reaching epidemic proportions. Over 18 million Americans have this disease, and another 41 million have prediabetes, a condition that may lead to diabetes. Wyoming statistics are also alarming: In 2003, an estimated 21,500 people in Wyoming (5.8% of adults) had been told that they have diabetes, and nearly 8,000 additional individuals have diabetes but are unaware of it.

The United States Department of Agriculture recently released the Dietary Guidelines for Americans 2005. Tommy G. Thompson, Secretary of Health and Human Services, identified the number one message of the new guidelines as getting the most nutrition out of calories consumed. Number two was finding a balance between food and physical activity. The key recommendations include an emphasis on increased consumption of fruits and vegetables, whole grains, and low-fat dairy and increased physical activity. Wyoming's large geographic size and low population makes food security a challenge for those with limited resources, and makes nutrition education, including food resource management, very important. In 2003, the percent of people below poverty in Wyoming was 10.9. Over the past several years, program educators have identified the following as the greatest needs for adult and youth low-income audiences in Wyoming: food resource management, food preparation skills, nutrition and lifestyle behaviors to improve health, feeding children, and food safety.

Microbial contamination of food is a serious public health problem: Each year in the U.S., food-borne diseases cause approximately 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths. With approximately 60% of food-borne illness outbreaks nationwide attributable to food-service establishments, food-service personnel are key to reducing the risk of food-borne illness. Additionally, home food preparers and consumers are important groups to reach with food safety education because their behaviors greatly affect the safety of food that they serve to others and/or eat themselves.

2. Scope of the Program

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

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

1. Assumptions made for the Program

Educators and faculty in the College of Agriculture have the expertise to plan, implement, and evaluate community-based programs for audiences. Extension educators have established solid networks and support in many areas throughout Wyoming to assist community leaders in addressing nutrition issues concerning children, youth, and families. National support from the United States Department of Agriculture would provide sufficient financial resources to support planning and programming in communities. Funding will be secure throughout the course of the project. People will be motivated to gain awareness, knowledge and skills. Individuals will incorporate skills and change behaviors. Educators can serve as catalysts for change.

In the 35 plus years EFNEP has been in existence, evaluation data shows the educational activities help limited resource families change behavior. Hands on activities in small groups are effective methods with low income families.

2. Ultimate goal(s) of this Program

Goals of educational activities of the NFS program:

Diet Quality: Individuals, Families and Household level: 1) Increased adoption of healthy food practices 2) Participation in regular physical activity Food Safety: Individuals, Families and Household level will have: 1) Improved personal hygiene such as hand washing, 2) Avoidance of cross-contamination, 3) Keeping foods at safe temperatures. Food Resource Management: Individuals, Families and Household level will: 1) Use a variety of food resources to reduce food costs, 2) Provide culturally acceptable meals that are balanced for cost as well as for nutritional value Food Security: Individuals, Families and Household level will have: Increased availability of personal/family food resources.

Dining with Diabetes: the ultimate goal of this program is to provide educational programs that increase the likelihood that people make healthy food choices consistent with the most recent Dietary Guidelines for Americans and My Pyramid. Through food and nutrition education, seek to improve the health and lives of patients with diabetes and their families.

CNP: the goal is to provide educational programs that increase the likelihood that people make healthy food choices consistent

with the most recent Dietary Guidelines for Americans and MyPyramid.

Food service industry in Wyoming, individuals and families experience decreased incidence of food-borne illnesses.

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
2008	15.0	0.0	3.5	0.0
2009	15.0	0.0	3.5	0.0
2010	15.0	0.0	3.5	0.0
2011	15.0	0.0	3.5	0.0
2012	15.0	0.0	3.5	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

EFNEP adult curriculum taught in a series of lessons; adult one-time lessons; youth curricula taught in a series of lessons and day camps; displays and demonstrations; State and community partnerships with agencies serving the low-income; training for educators ; evaluation of program; Ongoing - Updating of curricula and materials.

Other nutrition efforts will focus on educational programs; media outreach; health fairs; training ; assessment/data collection; and research in human health and disease (specifically type 2 diabetes) and N-3 Polyunsaturated fatty acids.
Since skeletal muscle is the main site for utilization of glucose and fatty acids in the body and insulin resistance in skelatal muscle is the key step tin the incidence of type 2 diabetes, we hypothesize that impaired fetal skeletal muscle growth due to nutrient deficiency plays an important role. Our goal is to understand how the development of fetal skeletal muscle affects the properties of skeletal muscle of adulthood, and to develop effective strategies to mitigate or avoid incidence of diabetes and obesity caused by impaired skeletal muscle development due to fetal nutrient deficiency.

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

Extension	
Direct Methods	Indirect Methods
• Demonstrations • One-on-One Intervention • Workshop • Group Discussion • Education Class	• Web sites • Newsletters • TV Media Programs • Other 1 (Applied research) • Public Service Announcement

3. Description of targeted audience

The University of Wyoming is committed to reaching underrepresented groups and individuals and to implementing the objectives of equal opportunity regulations relative to the consideration and treatment of clientele for participation in all programs regardless of their race, national origin, gender, age, religion, or disability. Specific target audience groups for the CNP (EFNEP) program: Low-income adults, Youth in Title I schools.

Targeted audiences for food safety programs include: • General Public (Youth and Adults) • Food Handlers: Commercial and Temporary Food Service • In-Home and Child Care Center Providers. Dining with Diabetes program targets the general public

(youth and adults) with Type 2 Diabetes.

All other nutrition efforts targeted audience includes: general public, both adults and youth and policy makers.

V(G). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2008	1000	4000	1500	3000
2009	1000	4000	1500	3000
2010	1000	4000	1500	3000
2011	1000	4000	1500	3000
2012	1000	4000	1500	3000

2. (Standard Research Target) Number of Patents

Expected Patents

2008 : 1 **2009 :** 1 **2010 :** 1 **2011 :** 1 **2012 :** 1

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	4	1
2009	4	1
2010	4	0
2011	4	0
2012	4	0

V(H). State Defined Outputs

1. Output Target

- Number of Dining with Diabetes, food safety and programs which promote healthier food choices and lifestyles offered in Wyoming communities. Target is number of programs.

  2008 : 35 **2009 :** 35 **2010 :** 50 **2011 :** 50 **2012 :** 50

- Number of participants in educational programs offered in NFS initiative. Target is number of participants.

  2008 : 500 **2009 :** 800 **2010 :** 1000 **2011 :** 1000 **2012 :** 1500

- Number of partnerships formed with environmental health specialists (food safety); public health of other agencies, and Diabetes coordinators. Target is number of partnerships.

  2008 : 5 **2009 :** 10 **2010 :** 10 **2011 :** 15 **2012 :** 15

- Increased adoption of healthy food practices and participation in regular physical activities. Target is number of participants

reporting outcome.

2008 :100 **2009 :**100 **2010 :** 250 **2011 :**250 **2012 :**500

- Effectiveness of research programs will be based on integration into extension programs, patents, grant dollars, and publications. The ultimate research goal is to provide tools for detection of food contaminated products. (target is number of research projects in NRI)

2008 :2 **2009 :**3 **2010 :** 5 **2011 :**5 **2012 :**5

- Improve ability to detect and analyze for the precence of food borne pahtogens. Target is number of research projects.

2008 :0 **2009 :**1 **2010 :** 1 **2011 :**2 **2012 :**2

V(I). State Defined Outcome

1. Outcome Target

Improved attitude related to diabetes self care, food, and physical activity. Targets are number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :100 **2009 :** 100 **2010 :** 100 **2011 :**200 **2012 :** 200

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

1. Outcome Target

Increased knowledge of healthy food choices for optimal diabetes management, and health. Targets are number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :500 **2009 :** 500 **2010 :** 1000 **2011 :**1000 **2012 :** 1500

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

1. Outcome Target

Improved skill in selection of healthy foods. Targets are number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :200 **2009 :** 200 **2010 :** 500 **2011 :**500 **2012 :** 500

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

1. Outcome Target

Improved eating behavior practices, food choices , and lifestyle habits. Targets are number of participants reporting outcome.

2. Outcome Type : Change in Action Outcome Measure

2008 :100 **2009 :** 200 **2010 :** 200 **2011 :**500 **2012 :** 500

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle

1. Outcome Target

Individuals participating in Dining with Diabetes programs will have improved blood glucose control which will improve health and diabetes management resulting in decreased chronic disease risk factors. Targets are number of participants reporting outcome.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
100	100	200	200	200

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

1. Outcome Target

Nutrition programs will result in decreased medical costs. Targets are number of participants reporting outcome.

2. Outcome Type : Change in Condition Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
5	10	25	25	50

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle

1. Outcome Target

Using a variety of food resources to reduce food costs. Providing culturally acceptable meals that are balances for cost as well as for nutritional value. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
100	100	100	100	100

3. Associated Knowledge Area(s)

- 704 - Nutrition and Hunger in the Population

1. Outcome Target

Improved personal hygiene such as hand washing. Avoidance of cross-contamination resulting in keeping foods safe. Target is number of participants reporting outcome.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
200	200	200	200	200

3. Associated Knowledge Area(s)

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

1. Outcome Target

Increased availability of personal/family food resources. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
50	50	50	50	50

3. Associated Knowledge Area(s)

- 704 - Nutrition and Hunger in the Population

1. Outcome Target

Individuals gain awareness, knowledge and skills related to: improved attitude about healthy eating; increased knowledge of healthy food choices; improved skill in selection of healthy foods; improved body image. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
100	100	100	100	100

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

1. Outcome Target

Individuals incorporate skills and change behaviors related to: increased participation in physical activity; increased knowledge of healthy food choices; improved skill in selection of healthy foods; improved body image. Target is number of participants reporting outcome.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
100	100	100	100	100

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

1. Outcome Target

Individuals and families experience: improved nutritional health; reduced medical costs; health improved through improved community opportunities; healthier weight; decreased risk factors for nutrition-health related problems. Target is number of participants reporting outcome.

2. Outcome Type : Change in Condition Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
10	25	50	100	100

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

1. Outcome Target

Increased awareness and knowledge of food safety practices. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
500	500	500	500	500

3. Associated Knowledge Area(s)

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

1. Outcome Target

Behavior or practice changes that improve food safety. Target is number of participants reporting outcome.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
250	250	250	250	250

3. Associated Knowledge Area(s)

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

1. Outcome Target

Reduced health care cost and economic loss to restaurants as a result of food-borne outbreaks. Target is number of participants reporting outcome.

2. Outcome Type : Change in Condition Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
5	10	10	10	10

3. Associated Knowledge Area(s)

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

1. Outcome Target

Decreased incidence of food-borne illness outbreaks in food service establishments. Target is number of food service establishments reporting outcome.

2. Outcome Type : Change in Condition Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
10	10	10	10	10

3. Associated Knowledge Area(s)

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

1. Outcome Target

The short term goal of research efforts is to increase grant funding and to patent detective process. Target is number of projects.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
0	1	1	2	2

3. Associated Knowledge Area(s)

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

1. Outcome Target

Research will result in easier, more rapid methods of detection of food borne pathogens such as E.coli and Listeria. Ultimately, deliniate genes that promote survival in the environment and result in disease contamination of food. Target is number of projects.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
1	1	1	1	2

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxins

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Populations changes (immigration,new cultural groupings,etc.)
- Competing Programatic Challenges
- Appropriations changes
- Economy
- Competing Public priorities
- Government Regulations
- Other (Global conditions)

Description

Many conditions and situations that exist in Wyoming are similar to those in other parts of the country, for example, the following: •Food choices made available and advertised to consumers by producers; •Access to timely and accurate information; •Coordination and cooperation of federal agencies and state partners; •Existence of local collaboration; •Level of funding at federal, state and local level; and •Willingness of private sector-funders, such as corporations, foundations, and community organizations, to collaborate with Wyoming Cooperative Extension Service.

If EFNEP funding is decreased, appropriations will impact program delivery. Population changes impact limited resource audiences eligible for program.

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

1. Evaluation Studies Planned

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

Description

National EFNEP reporting program is used. Entry and exit data is collected on program participants. Case studies and success stories are gathered by nutrition educators.

Collection of pre-, post-, and follow-up program data as part of the Steps to a New You applied research project. Collection of pre- and post-program evaluation data as part of other programs.

Dining with Diabetes programs will utilize collection of pre-, post-, and follow-up program data as part of the Dining with Diabetes in Wyoming project.

2. Data Collection Methods

- Unstructured
- Observation
- Tests
- On-Site
- Structured
- Whole population
- Mail

Description

Entry and exit interviews and surveys with EFNEP participants. Observation of skills demonstrated regarding food buying, food safety and preparation.

Food safety evaluations are conducted on-site through a written survey. ServSafe® certification training is evaluated through a test scored by the National Restaurant Association.

Pre and post and follow-up data will be collected using written surveys, pre- and post- tests, and interview information to determine impact of programs.

Collection of pre-, post-, and follow-up program data as part of the Dining with Diabetes in Wyoming project. In addition, stakeholder input will be assessed through area advisory meetings, surveys, external focus groups, internal focus groups, needs assessments, etc. in order to identify emerging issues to redirect extension programs, and set priorities.

V(A). Planned Program (Summary)

1. Name of the Planned Program

Profitable and Sustainable Agriculture Systems

2. Brief summary about Planned Program

University of Wyoming Cooperative Extension educators and specialists as members of the Profitable and Sustainable Agriculture Initiative Team will cooperatively develop educational programs to address the needs of Wyoming agriculture producers to help them become profitable and sustainable. Livestock producers throughout Wyoming face an ever changing industry with issues such as; increasing cost of production, increasing pressure for individual animal identification, changing requirements for marketing knowledge. Drought for the past seven years provides challenges for crop producers. In addition, this program addresses needs of urban and small acreage landowners, providing education in sustainable and environmentally sound horticultural practices and maintenance of healthy urban and production forests. The number of people moving into the West has steadily increased over recent years. While many new residents choose to live in urban areas, many others wish to live in rural and semi-rural settings on small tracts of what was once farmland, rangeland, or forested land. On these fragmented parcels they engage in activities that affect the natural resources of the state, such as agriculture. AES will provide additional support to strengthen knowledge areas related to pests, pest management, nutrient relationships, variety improvement, biological efficiency, biological pest control, and management of additional pest species such as diseases and nematodes. Research development will include an increase in horticultural research at the UW R & E Centers. In addition AES will provide support to address other issues in livestock systems in several areas such as pest management, poisonous plants, and wildlife/livestock diseases interfaces. Much of these research efforts are collaborative in nature and involve multiple disciplines, multiple states, and USDA facilities located at Akron and Fort Collins, Colorado. Early weaning efforts to minimize grazing effects on drought stressed pastures is being conducted by a group of scientists and extension specialists in the Northern Great Plains. Time spent on research, program promotion, and client visits will be necessary to reach our goals. Money generated from grants, outside sponsors, and program registration fees, in addition to annual budget allocations, will be used for media, travel, accommodations, publications and postage to reach potential clientele. The use of volunteers will be employed to fortify our efforts at meetings and tours. Collaborative partners include but are not limited to local and state Weed & Pest, local and federal Conservation Services, Wyoming State Forestry, the Wyoming Stock Growers and Woolgrowers associations, and Crop Improvement Association. Volunteers include but are not limited to county-based Master Gardeners, and 4-H leaders, and producers as cooperators. Through the use of UW CES technology and equipment, such as remote sensing, guidance and leadership will be provided by educators and specialists to improve traditional management practices. Partnerships will be formed with ag businesses, financial organizations and investment companies, federal agencies and other universities to deliver timely information to producers and business owners.

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

- 102 5% Soil, Plant, Water, Nutrient Relationships
- 104 5% Protect Soil from Harmful Effects of Natural Elements
- 111 5% Conservation and Efficient Use of Water
- 202 5% Plant Genetic Resources
- 203 5% Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 5% Plant Product Quality and Utility (Preharvest)
- 205 5% Plant Management Systems
- 206 5% Basic Plant Biology
- 211 5% Insects, Mites, and Other Arthropods Affecting Plants
- 212 5% Pathogens and Nematodes Affecting Plants
- 213 5% Weeds Affecting Plants
- 214 5% Vertebrates, Mollusks, and Other Pests Affecting Plants
- 215 5% Biological Control of Pests Affecting Plants
- 216 5% Integrated Pest Management Systems
- 301 5% Reproductive Performance of Animals
- 302 5% Nutrient Utilization in Animals
- 305 5% Animal Physiological Processes
- 307 5% Animal Management Systems
- 311 5% Animal Diseases
- 601 5% Economics of Agricultural Production and Farm Management

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

1. Situation and priorities

The value of agriculture to Wyoming's economy approaches $1 billion each year, and agriculture's contribution to open spaces, wildlife, and recreation is even greater. The largest component of Wyoming agriculture is the beef cattle industry, accounting for approximately 70 percent of all cash receipts and 86.5 percent of all livestock production. Sheep, lamb, and wool receipts in 1998 were $29 million. Forage sustains the Wyoming livestock industry. Hay is the leading crop in Wyoming with production valued at $185 million annually, mostly marketed through livestock.

Crop producers across Wyoming are challenged with increasing production costs, global market competition, environmental pressure, and decreased labor availability. Alternative markets, improved management practices, and cost efficiency is critical to ensure profitability and sustainability for Wyoming producers.

In Wyoming, horticulture involves commercial production of vegetables, fruits, herbaceous and woody ornamentals, turf grass sod and seed. Wyoming horticulture also involves all of these products in the consumer's homes, landscapes or businesses. Demand for consumer-based horticulture is a large local, area, and state wide need. Wyoming's environment includes less than optimal soil conditions, a very harsh climate for many horticultural crops and growing practices; the variation in elevation across the state as well as short to very short growing seasons all contribute to difficult growing conditions.

Statistics show that while in Wyoming the number of farms has remained relatively constant, farm size has declined–evidence of the increasing number of smaller-size operations. Since 1987 the total number of farms in Wyoming increased only two percent, while the number of farms under 50 acres increased 13 percent. More importantly, the number of farms between 10 and 49 acres increased fully 55 percent. In Wyoming managers of farms with less than 50 acres make decisions that affect 44,018 acres. This proliferation of new landowners has the potential to benefit the communities in which they reside in a variety of ways. However, many of these new landowners have little knowledge of resource management in Wyoming's ecosystems. Thus their expectations of the land and their land management techniques can be inappropriate for sustainable management. Agriculture and natural resource professionals are presently struggling to determine how to most effectively meet the educational needs of these new landowners and potential entrepreneurs.

2. Scope of the Program

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

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

1. Assumptions made for the Program

1) Information exists that can improve the profitability and sustainability of Wyoming agriculture. 2) UW College of Agriculture personnel are dedicated to collection and distribution of non-biased, research-based information. 3) People will be interested in alternative crop production, and will be motivated to change. 4) Increased understanding of the biofuel industry will increase participation by Wyoming farmers. 5) People will be interested in improved livestock production techniques, and will be motivated to change. 6) Increased understanding of the National Animal Identification Plan will increase participation by Wyoming ranchers. 7) Citizens will continue to participate in Master Gardener trainings and continue to volunteer in their communities. 8) Increased understanding of green industry production will increase participation by Wyoming's traditional crop and small acreage producers. 9) Small acreage land ownership will continue to increase and these land managers will continue to need information to make sustainable land management decisions. 9) Adoption of recommended practices will lead to sustainability of ecosystems. 10) Funding will be secure for speaker honorariums, facilitation, travel, accommodations, publications, and media.
.

2. Ultimate goal(s) of this Program

Short Term: 1) Wyoming crop producers will be aware of the type of crops used by the biofuel industry, and will have a general understanding of the process of turning crops into fuel. Pasture land owners and/or managers will be able to recognize indicators of pasture condition and quality and will possess decision-making skills necessary to make needed management decisions. Producers with the resources to irrigate their crops and/or pasture will know and understand costs and returns associated with their irrigation practices and systems. Crop producers in Wyoming will be aware of types of crops and cropping practices involved in producing crops for nutraceutical and/or pharmaceutical use. 2) Wyoming livestock producers will gain an understanding and compliance with the National Animal Identification Program. Producers will also gain an understanding of heifer development as well as opportunities for matching genetic improvement with successful marketing strategies. Livestock producers will have an increased awareness of sources of risk as well as risk-management alternatives. 3) Water conservation will improve the profitability and sustainability of Wyoming's green industry and municipal water supplies. Community property values will increase due to sustained landscapes designed with sustainable plant choices. 4) Increase the percentage of small acreage land managers who are managing their land in a sustainable manner.

Medium Term: 1) Wyoming producers will be able to substitute traditional or present crop production with alternative crops to market with the biofuel industry or pharmaceutical companies if increased profitability results from the substitution. The knowledge gained will be implemented, resulting in grazing strategies being reviewed and possibly modified, irrigation systems improved, and traditional practices evaluated for compliance with recent research-based information. 2) Wyoming producers will be able to implement electronic animal identification in their operations to gain advantages in herd management. Producers will have a greater awareness of food security and animal management practices. Producers will be able to utilize technology and information to make better heifer selection decisions.

Long Term: 1) Wyoming producers will be dependable contributors to the biofuel industry, improving the economical stability of the region. Homeland security will be supported by the removal of the nation's dependence on petroleum. Establishment of markets with pharmaceutical companies will result in an increase in supply of medicinal products, as well as contribute to regional economic growth. Water conservation and improved pasture conditions will improve the profitability and sustainability of Wyoming's agriculture industry, and further establish Ag producers as ultimate stewards. 2) Wyoming producers will benefit through an increased value of livestock and crops related to improved cropping practices, herd selection and management. 3) Wyoming families will increase their use of fresh produce, making healthier choices in food selection. Youth and their families will choose gardening as a healthy choice for active living.

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
2008	26.0	0.0	30.0	0.0
2009	26.0	0.0	30.0	0.0
2010	26.0	0.0	30.0	0.0
2011	26.0	0.0	30.0	0.0
2012	26.0	0.0	30.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Any or all channels of the media will be used to familiarize the public with UW College of Agriculture areas of research and extension programming and personnel. Media releases in local newspapers, radio spots and television advertisements will inform the public of upcoming Extension programs and research field days including contact persons. Newsletter articles distributed both electronically and through the mail by county offices, area teams, and the University of Wyoming will reach producers locally, regionally, and state-wide. Reflections, a yearly publication by AES showcases research, extension, and education programs in the College. This publication is distributed to over 6,000 households and businesses throughout the state. Public educational programs with invited speakers and Extension specialists and educators presenting research-based information will continue to be held in response to local, state, and national crop and livestock production, horticultural and small acreage issues. Demonstrations of technology and skills training will be included in education curriculum to enhance educational effectiveness. Field tours will be organized to provide producers with the opportunity to observe industry procedure (i.e., tour of an ethanol plant).

Areas of focus in livestock systems: emphasis will be placed on the four main areas; herd management and traceability, herd development, cropping systems and livestock development, risk and operation management techniques and alternatives to enhance the stability of Wyoming livestock producers. The new Sustainable Agriculture Research and Extension Center (SAREC) located at Lingle, Wyoming will provide a resource base for integrating livestock/forage based programs.

From the Ground Up television news segments will continue to be developed by UW CES field staff and aired on statewide television stations to disseminate horticulture information. Newsletter articles distributed both electronically and through the mail by county offices, Master Gardener organizations, area teams, and UW will reach producers, consumers and volunteers. UW CES specialists will continue to develop Horticultural Train the Trainer events for the benefit of training UW CES field staff and long term Master Gardener volunteers. Recruitment of Master Gardener, 4-H leaders, and youths as well as other volunteers will occur on an ongoing basis. With on-going recruitment Wyoming will see an increase in the number of Master Gardeners. 4-H Vegetable and Forestry judging programs will provide youth with opportunities to evaluate the value of fresh produce and forest products. 4-H gardening project leaders and youth will receive training in proper gardening practices.

Development of a statewide database of defining characteristics of small acre owners. Educational programs targeted at small acreage landowners emphasizing sustainable land management practices. Individual interaction with small acreage landowners educating them on resources available to assist them with sustainable land management practices. Development and distribution of a targeted, user friendly publication providing education on sustainable land management practices. Coordination with other interested agencies to provide education to this clientele, and funding for this effort. Provide educational opportunities for professionals involved with small acreage landowners. Seek external funding to provide education to natural resource professionals, and small acreage landowners.

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

Extension	
Direct Methods	**Indirect Methods**
• Other 1 (Field tours) • Workshop • One-on-One Intervention • Education Class • Demonstrations • Group Discussion	• Web sites • Public Service Announcement • TV Media Programs • Newsletters • Other 1 (Applied research)

3. Description of targeted audience

The University of Wyoming is committed to reaching underrepresented groups and individuals and to implementing the objectives of equal opportunity regulations relative to the consideration and treatment of clientele for participation in all programs regardless of their race, national origin, gender, age, religion, or disability. Participants will include policy makers for County, State, and Federal government agencies, crop producers, livestock producers, ag lenders, potential investors, and the scientific community. An existing secondary audience will be the media, general public, and interest groups not directly involved in production agriculture (i.e., environmental groups).

The targeted audience for horticulture programs include: horticultural crop producers and consumers, Master Gardener and 4-H volunteers, youths, lenders, and potential investors. An existing secondary audience will be the media, general public, and interested groups not directly involved in the production of horticultural crops or products.

The target audience for small acreage programming is individuals who reside on small acreages of 40 acres or less.

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
2008	20000	50000	500	1000
2009	20000	50000	500	1000
2010	20000	50000	500	1000
2011	20000	50000	500	1000
2012	20000	50000	500	1000

2. (Standard Research Target) Number of Patents

Expected Patents

2008 : 4 **2009 :** 4 **2010 :** 4 **2011 :** 4 **2012 :** 4

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	25	2
2009	25	2
2010	25	2
2011	25	2
2012	25	2

V(H). State Defined Outputs

1. Output Target

- Number of horticulture contacts reached. Target is the number of contacts.

  2008 :15000 **2009 :**15000 **2010 :** 20000 **2011 :**20000 **2012 :**20000

- Research efforts will develop new and improved forages for high elevation livestock systems. Target measures are new or improved forages.

  2008 :1 **2009 :**1 **2010 :** 2 **2011 :**2 **2012 :**2

- Ultimately, this program will improve livestock value through cropping practices, herd selection, and management for Wyoming livestock producers. Targets include number of programs conducted, livestock producers reporting change in practices as a result of educational efforts.

  2008 :0 **2009 :**1 **2010 :** 1 **2011 :**2 **2012 :**2

- Number of subscriptions to Barnyards and Backyards publication. Target is paid subscription numbers for magazine.

  2008 :2500 **2009 :**2500 **2010 :** 3000 **2011 :**3000 **2012 :**4000

- Develop improved methods of estimating forage base under varying environmental conditions. Targets included new methods developed for assessing forage base and growth.

  2008 :0 **2009 :**1 **2010 :** 1 **2011 :**1 **2012 :**1

- Number of Master Gardener Volunteers statewide. Target measure is new volunteers recruited and trained.

  2008 :100 **2009 :**150 **2010 :** 150 **2011 :**200 **2012 :**200

- Research will develop more sustainable dryland cropping systems using extended rotations, ley pastures and narrow row fallow systems. Short term goals include increased grants and demonstration projects. Target is the number of demonstration projects implemented.

  2008 :2 **2009 :**2 **2010 :** 3 **2011 :**3 **2012 :**3

- Research: Wildlife/livestock disease interaction and transfer: long term goal to maintain Wyomings' Brucellosis free status and determine CWD transfer from cervids to domestic livestock. Targets are defined as projects developed.

  2008 :2 **2009 :**2 **2010 :** 3 **2011 :**3 **2012 :**3

- Research: Improve pest management practices. Long term goal is to reduce pesticide applications and increase use of IPM practices. Targets are programs implemented.

  2008 :1 **2009 :**2 **2010 :** 2 **2011 :**2 **2012 :**3

- Research: Development of biological control practices that effectively reduce populations of invasive weeds. Targets are listed as new programs developed on various weed species.

  2008 :1 **2009 :**1 **2010 :** 1 **2011 :**2 **2012 :**2

- Research: Development of simple blood test for diagnosis of brisket disease. Short term goals include increased grant funding and demonstration results. Target is grant funding obtained.

  2008 :1 **2009 :**1 **2010 :** 1 **2011 :**1 **2012 :**2

- Research: Determine the impact environment has on the ability of female ewes to produce healthy offspring. The long term goal is to develop models to predict production performance under different environments. Targets listed are new projects intended.

  2008 :1 **2009 :**1 **2010 :** 1 **2011 :**2 **2012 :**2

- Develop profitable and sustainable forage based livestock systems for the High Plains. Targets are defined as new systems developed.

  2008 :0 **2009 :**1 **2010 :** 1 **2011 :**1 **2012 :**2

V(I). State Defined Outcome

1. Outcome Target

Awareness created through extension and research efforts. Target is number of participants in extension and R&E programs.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :500 **2009 :** 500 **2010 :** 500 **2011 :**500 **2012 :** 500

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 111 - Conservation and Efficient Use of Water
- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Pasture land owners and/or managers will be able to recognize indicators of pasture condition and will possess decision-making skills necessary to make needed management decisions. Target is number of participants reporting outcome.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
100	100	100	100	100

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 213 - Weeds Affecting Plants
- 601 - Economics of Agricultural Production and Farm Management

1. Outcome Target

Producers with the resources to irrigate their crops and/or pasture will know and understand costs and returns associated with their irrigation practices and systems. Target is number of producers reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
50	50	50	50	50

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management

1. Outcome Target

Wyoming producers will implement electronic animal identification to gain advantages in herd management. Target is number of producers implementing outcome.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
0	10	20	25	30

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems

1. Outcome Target

Producers will gain an understanding of heifer development as well as opportunities for matching genetic improvement with successful marketing strategies. Target is number of producers.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
10	10	20	20	30

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 305 - Animal Physiological Processes
- 307 - Animal Management Systems
- 601 - Economics of Agricultural Production and Farm Management

1. Outcome Target

Wyoming producers will benefit through an increased value of livestock and crops related to improved cropping practices, herd selection, and management. Target is number of producers.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
0	25	25	25	25

3. Associated Knowledge Area(s)

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 301 - Reproductive Performance of Animals
- 307 - Animal Management Systems
- 601 - Economics of Agricultural Production and Farm Management

1. Outcome Target

Wyoming crop producers will be able to substitute traditional or current crop production with alternative horticultural crops to market if increased profitability may result. Target is number of crop producers.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
25	25	25	25	25

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 601 - Economics of Agricultural Production and Farm Management

1. Outcome Target

Water conservation will improve the profitability and sustainability of Wyoming's green industry and municipal water supplies. Target is number of participants reporting outcome.

2. Outcome Type : Change in Action Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
100	100	100	100	100

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water

1. Outcome Target

Youth and their families will choose gardening as a healthy choice for active living. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
500	500	500	500	500

3. Associated Knowledge Area(s)

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

1. Outcome Target

Research: Awareness created; change in knowledge through publications and integration into extension programs. Target is number of research projects.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 : 2	**2009 :** 2	**2010 :** 3	**2011 :** 3	**2012 :** 3

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 206 - Basic Plant Biology

1. Outcome Target

Research - Awareness created in animal systems; Change in knowledge through publications and integration into extension programs. Target is number of projects.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 : 2	**2009 :** 2	**2010 :** 3	**2011 :** 3	**2012 :** 3

3. Associated Knowledge Area(s)

- 305 - Animal Physiological Processes
- 307 - Animal Management Systems
- 311 - Animal Diseases

1. Outcome Target

Research - Awareness created on IPM; change in knowledge through publications and integration into extension programs. Target is number of projects.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 : 2	**2009 :** 2	**2010 :** 3	**2011 :** 3	**2012 :** 3

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Research - Awareness created in plant systems; change in knowledge through publications and integration into extension programs. Target is number of projects.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 : 2	**2009 :** 2	**2010 :** 3	**2011 :** 3	**2012 :** 3

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants

- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

1. Outcome Target

Research in animal reproduction - awareness created; change in knowledge through publications and integration into extension activities. Target is number of projects.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 : 2 **2009 :** 2 **2010 :** 3 **2011 :** 3 **2012 :** 3

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 305 - Animal Physiological Processes

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Weather extremes and drought may affect small acreage owners in agriculture or horticulture issues. The economy forces many landowners to sell parcels of their property to small acreage owners. Many of the new land owners are also new to the west. Funding is vital to this program, changes in appropriations could impact funding. Additionally, global market changes impact both research and extension programs in profitable and sustainable agriculture.

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

1. Evaluation Studies Planned

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

Description

Systematic evaluation utilizing a variety of methods will be used to document outcomes and impact to clientele. This program includes four focuses: livestock systems; crop systems; urban horticulture and volunteer master gardeners; and small acreage. Each focus has developed a logic model which includes specific evaluation plans and methods. Educational activities will use written evaluations following the program, as follow-up; pre- and post -test to measure knowledge and aspirations. Follow-up evaluations either by mail, phone, or personal visit will document medium and long term outcomes.

2. Data Collection Methods

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

Description

Multiple methods will be used. Sampling will be utilized to gather evaluative data from media education efforts. Surveys, by mail, telephone, or on-site will be used with program participants. Observation and unstructured interviews will be used to determine medium to long term outcomes. Tests including pre- and post- will be used to measure knowledge gained.

V(A). Planned Program (Summary)

1. Name of the Planned Program

Sustainable Management of Rangeland Resources (SMRR)

2. Brief summary about Planned Program

Wyoming's tremendous natural resources support an abundance of recreational opportunities but they also provide the basis for a number of industries that are very important to the state's economy. Therefore, the way in which natural resources are managed, governed and used is of great importance to Wyoming residents. About 73 percent of Wyoming agriculture is based on livestock production. At least 95 percent of Wyoming's livestock operations utilize rangeland, and many of these operations use public land leases as a portion of their forage base. Forty-eight percent of the land area in Wyoming is publicly-owned and is managed by government agencies. Livestock on public rangelands is managed by producers in cooperation with government agencies. Continual educational and research efforts are essential for both agricultural producers and agency personnel to maintain or improve their management skills, to minimize producer-agency conflict and, ultimately, to keep the land healthy and productive, and to maintain or increase the profitability of range livestock production operations. Natural resource management policies administered by agencies have significant impacts on Wyoming's economy and quality of life. These agencies are influenced by public input. Private lands are also extremely important as watersheds, wildlife habitats and other values significant to all citizens. Despite the many natural resource-related opportunities, many Wyomingites are not directly tied to natural resources and agriculture. This results in lack of knowledge and experience regarding natural resource systems, their management and the industries they support. Unfortunately, a segment of the general public appears to believe that any use of even renewable resources is damaging. There is often conflict and occasional litigation among interest groups that differ on how resources should be used and managed. Natural resources are important to all segments of the Wyoming population. The natural resource focus of the college will provide research and educational programs designed to foster an understanding of Wyoming's ecosystems as related to the concerns and needs of the state.

Extension is uniquely positioned in that we have existing volunteer youth development programming infrastructure already built in the 4-H program featuring offices in all of Wyoming's 23 counties, several thousand volunteer staff and thousands of youth already acquainted with the 4-H program. These youth present an immediate natural resource education audience and an opportunity to reach the broader youth audience with the educational resources we have. Building stronger natural resource programs, enhancing natural resource teaching opportunities within existing high-interest projects (like market livestock and shooting sports projects) and increasing youth development opportunities are key. This will continue to foster interest in natural resource careers, knowledge about the land, how to be good stewards of the land, and how to be prepared to make informed decisions about the use and management of Wyoming's natural resources as adults.
The SMRR initiative team will work collaboratively with the PSAS initiative team to develop, implement and evaluate programs designed for small acreage land owners.

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

- 101 5% Appraisal of Soil Resources
- 102 5% Soil, Plant, Water, Nutrient Relationships
- 103 5% Management of Saline and Sodic Soils and Salinity
- 104 5% Protect Soil from Harmful Effects of Natural Elements
- 111 5% Conservation and Efficient Use of Water
- 112 5% Watershed Protection and Management
- 121 5% Management of Range Resources
- 123 5% Management and Sustainability of Forest Resources
- 131 5% Alternative Uses of Land
- 132 5% Weather and Climate
- 135 5% Aquatic and Terrestrial Wildlife
- 136 5% Conservation of Biological Diversity
- 205 5% Plant Management Systems
- 206 5% Basic Plant Biology
- 211 5% Insects, Mites, and Other Arthropods Affecting Plants
- 213 5% Weeds Affecting Plants
- 306 5% Environmental Stress in Animals
- 311 5% Animal Diseases
- 314 5% Toxic Chemicals, Poisonous Plants, Naturally Occuring Toxins, and Other Hazards Affecting Animals
- 605 5% Natural Resource and Environmental Economics

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

1. Situation and priorities

Wyoming has abundant natural resources. A variety of ecosystems and agroecosystems from near pristine wilderness to well managed forests, rangelands, and urban landscapes make Wyoming a unique and inviting place. Wyoming's economy is based on use of its natural resources (minerals, energy, and agricultural products) by U.S. and global economies. The state is characterized by rural areas and wildlife resources and serves as a national and international travel destination. Management of natural resources and associated environmental issues permeate nearly every aspect of life in the state. A compilation of advisory board input from several areas of the state recommended a focused effort to educate the general public on natural resource topics and issues. To raise awareness and knowledge regarding natural resources, research efforts will focus on sustainable production practices, water quality, and alternative land uses, and will serve as an information base to assist UW CES' ability to educate Wyoming citizens to make informed decisions that will improve public policy, reduce conflict and contribute to the economic and ecological sustainability of Wyoming communities. Many of these research programs are integrated with extension efforts and are multidisciplinary as well as multi-state in nature. The SMRR team will work collaboratively with the PSAS initiative to provide education to small acreage land owners.

Rangelands comprise over 80 percent of Wyoming’s land base. Range livestock production, recreation, and wildlife habitat are some of the dominant uses of rangelands. Rangelands also provide water for homes and municipalities, irrigation, industries, fisheries, wildlife and livestock. In semi-arid Wyoming, rangeland uses need to be compatible with maintaining the quality and quantity of water resources. Livestock grazing and wildlife habitat management must also be compatible as both are important for the sustainability of the State’s rangeland resources and its economy.

Given the importance of natural resources to the State of Wyoming, it is imperative for Wyoming residents, including youth, to be knowledgeable about the use and management of natural resources. The desire to be engaged and learning about natural resources is already at the top of the list for many residents of Wyoming. Since natural resources are such an important part of Wyoming’s way of life, there are wide-spread avenues to utilize their importance and attractiveness to reach youth by employing the eight essential elements of youth development. For many topics, including natural resource appreciation, the childhood years are often “the teachable moment.”

2. Scope of the Program

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

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

1. Assumptions made for the Program

The program effects cannot be achieved without the partnership and collaboration of Federal agencies, industry, and state agencies. The necessary resource will be available. The college is capable of providing the leadership along with the scientific information. Public is interested and open to information on natural resources. Informed citizens need knowledge of natural resources and their management to participate in public policy formation.
•Rangeland management practices have ecological consequences. •Improved knowledge and skills will result in improved practices. •Proven rangeland management practices will result in sustainability of the rangeland resources, agricultural operations and help rural communities.
• Youth are interested in natural resources. • Youth understand that knowledge of natural resources is an important enhancement to their quality of life. • The childhood years are “the teachable moment”.

2. Ultimate goal(s) of this Program

The vision is that decision makers will gain scientific information to make sound environmental decisions on ecosystem management. Knowledge and awareness is expected to increase the ability of Wyoming citizens to make informed decisions that will improve public policy, reduce conflict and contribute to the economic and ecological sustainability of Wyoming communities. Expected long-term outcomes from this program include: •Improved rangeland health, productivity, and profitability. •More profit for range-based agricultural enterprises. •Improve values of rangelands for multiple uses. •Sustain economic base of communities relying on rangeland industries. •Promote rural social and cultural stability.
To educate the youth about the use and management of natural resources, increasing their interest in natural resources and related careers.

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
2008	12.0	0.0	12.0	0.0
2009	12.0	0.0	12.0	0.0
2010	12.0	0.0	12.0	0.0
2011	12.0	0.0	12.0	0.0
2012	12.0	0.0	12.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Natural resource programs will reach out to a broad spectrum of constituents throughout Wyoming using a variety of sources. Workshops on sustainable rangeland and animal management principles will be offered within each extension area within the state. Provide professional development opportunities for rangeland professionals. Develop written educational materials on rangeland and animal management practices and principles (fact sheets, bulletins, media, presentations, Web). Conduct technical consultation on rangeland and animal management, and monitoring of rangelands. Develop media on rangeland management principles (radio, TV, press). Conduct research and demonstrations on sustainable natural resource management principles. Work with individual rangeland managers on developing, implementing, and evaluating sustainable management practices.

Develop and/or present programs on natural resources at youth activities. Produce, or update currently produced educational materials targeted to youth on natural resource education. Produce information/education modules emphasizing natural resource topics for 4-H leader use in 4-H project with large enrollment.

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

Extension	
Direct Methods	**Indirect Methods**
• Group Discussion • Workshop • Other 2 (field days, plot tours) • Demonstrations • One-on-One Intervention • Other 1 (Short courses) • Education Class	• Other 2 (Referred journals) • Public Service Announcement • Newsletters • Web sites • TV Media Programs • Other 1 (Publications)

3. Description of targeted audience

The University of Wyoming is committed to reaching underrepresented groups and individuals and to implementing the objectives of equal opportunity regulations relative to the consideration and treatment of clientele for participation in programs regardless of their race, national origin, gender, age, religion, or disability. The College of Agriculture is committed to transmitting unbiased scientific-based information to solve local and regional natural resource conflicts involving state, Federal, and private resources. All efforts will be made to provide information through direct contact and through publications, newsletters, Web sites and other methods. The general public and exurban landowners, agricultural producers and federal and state land management agency personnel.
General youth and traditional 4-H are among the target audiences for natural resource youth programs.

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
2008	100	2000	50	500
2009	100	2000	50	500
2010	200	2000	50	500
2011	200	2000	100	500
2012	300	2000	100	500

2. (Standard Research Target) Number of Patents

Expected Patents

2008 : 1 **2009 :** 1 **2010 :** 1 **2011 :** 1 **2012 :** 1

3. Expected Peer Review Publications

Year	Research Target	Extension Target
2008	8	0
2009	8	0
2010	8	1
2011	8	1
2012	8	1

V(H). State Defined Outputs

1. Output Target

- Number of programs implemented. Target is number of programs.

  2008 : 5 **2009 :** 5 **2010 :** 10 **2011 :** 10 **2012 :** 15

- Documented media efforts implemented. Target is number of media efforts such as magazines, TV, radio, newspaper inserts.

  2008 : 3 **2009 :** 5 **2010 :** 5 **2011 :** 5 **2012 :** 5

- Number of individuals participating in educational programs or activities. Target is number of participants.

  2008 : 100 **2009 :** 100 **2010 :** 200 **2011 :** 200 **2012 :** 300

- Number of agency personnel, range professionals, and general public participating in training. Target is number of participants.

  2008 : 100 **2009 :** 100 **2010 :** 150 **2011 :** 200 **2012 :** 250

- Number of youth related natural resource programs implemented. Target is number of programs.

  2008 : 5 **2009 :** 5 **2010 :** 5 **2011 :** 10 **2012 :** 10

- Number of youth participating in natural resource educational programs or activities. Target is number of participants.

  2008 : 100 **2009 :** 100 **2010 :** 100 **2011 :** 200 **2012 :** 200

- Research: The ability of producers to adopt economically and environmentally sustainable production practices in the face of persistent drought will improve the economic viability while reducing potential resource damage. The long term goal will be to model scenarios of long term drought on economic viability of rural communities. Target is number of producers implementing practices.

  2008 : 1 **2009 :** 1 **2010 :** 1 **2011 :** 1 **2012 :** 2

- Research - Impacts of natural resource development on long term rural water quality. Long term goals will be to integrate knowledge gained into environmental regulations and improved water quality. Target is number of projects.

  2008 : 1 **2009 :** 1 **2010 :** 2 **2011 :** 2 **2012 :** 2

- Research - One of the major environmental controversies is rising CO2 levels. There is a large potential to increase C storage in disturbed and reclaimed land. Long term goals will be to develop improved soil properties on these sites. Target is number of projects.

  2008 : 1 **2009 :** 1 **2010 :** 1 **2011 :** 1 **2012 :** 2

- Research - Matching animal productivity to actual resources available rather than modifying resources to match animal nutrient needs. The long term goal is to develop more sustainble grazing systems. Target is number of projects.

2008 :1 **2009 :**1 **2010 :** 1 **2011 :**1 **2012 :**1

V(I). State Defined Outcome

1. Outcome Target

Increase public knowledge and appreciation of natural resources and public awareness of sustainable resources. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :500 **2009 :** 500 **2010 :** 500 **2011 :**500 **2012 :** 500

3. Associated Knowledge Area(s)

- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 131 - Alternative Uses of Land
- 605 - Natural Resource and Environmental Economics

1. Outcome Target

General public understands the impact of resource use and managmenent on the quality and quantity of the resources. (i.e. water, rangeland, wildlife, viewsheds). Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :100 **2009 :** 100 **2010 :** 250 **2011 :**250 **2012 :** 500

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 135 - Aquatic and Terrestrial Wildlife

1. Outcome Target

Raise the understanding of the general public on the interaction of natural resource use in Wyoming's economy. Citizens will make better informed decisions on natural resource issues and topics. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :100 **2009 :** 100 **2010 :** 100 **2011 :**100 **2012 :** 100

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 131 - Alternative Uses of Land
- 135 - Aquatic and Terrestrial Wildlife
- 605 - Natural Resource and Environmental Economics

1. Outcome Target

Greater public consensus of management of private and public lands resulting in less litigation and burden on the system, through unbiased information that will reduce conflict and contribute to the economic and biological sustainability of Wyoming communities. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
0	0	5	10	10

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 131 - Alternative Uses of Land
- 135 - Aquatic and Terrestrial Wildlife
- 605 - Natural Resource and Environmental Economics

1. Outcome Target

Youth participating in natural resource programs will have increased interest in careers in natural resources. Target is youth participants choosing natural resource careers.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
5	10	20	20	50

3. Associated Knowledge Area(s)

- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 131 - Alternative Uses of Land
- 132 - Weather and Climate
- 135 - Aquatic and Terrestrial Wildlife

1. Outcome Target

Increased enrollment in 4-H natural resource programs (projects, camps, activities). Target is number of participants.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
25	25	50	50	100

3. Associated Knowledge Area(s)

- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 132 - Weather and Climate
- 135 - Aquatic and Terrestrial Wildlife

1. Outcome Target

Increase knowledge, awareness and skills among youth on natural resources, their management and associated issues. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
100	100	100	100	100

3. Associated Knowledge Area(s)

- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 135 - Aquatic and Terrestrial Wildlife
- 306 - Environmental Stress in Animals
- 311 - Animal Diseases

1. Outcome Target

Raise awareness, knowledge, and skills for development, implementation and evaluation of land management plans that include management of grazing and browsing animals, and adjusting managment as to necessary to meet objectives. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
20	20	50	50	50

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 131 - Alternative Uses of Land

1. Outcome Target

Land managers, public and private, will develop, implement, and evaluate plans for improved management of rangeland resources and associated herbivores. Target is number of participants reporting outcome.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
10	10	20	20	25

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 135 - Aquatic and Terrestrial Wildlife
- 306 - Environmental Stress in Animals
- 311 - Animal Diseases
- 605 - Natural Resource and Environmental Economics

1. Outcome Target

Increased profit for range-based agriculture enterprises. Target is number of participants reporting outcome.

2. Outcome Type : Change in Condition Outcome Measure

2008 :	**2009 :**	**2010 :**	**2011 :**	**2012 :**
0	2	5	5	5

3. Associated Knowledge Area(s)

- 605 - Natural Resource and Environmental Economics

1. Outcome Target

Improved rangeland health, productivity, and profitability including value of rangeland for multiple use. Target is number of participants reporting outcome.

2. Outcome Type : Change in Condition Outcome Measure

2008 :0 **2009 :** 0 **2010 :** 5 **2011 :**5 **2012 :** 10

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 104 - Protect Soil from Harmful Effects of Natural Elements
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 131 - Alternative Uses of Land
- 132 - Weather and Climate
- 135 - Aquatic and Terrestrial Wildlife
- 306 - Environmental Stress in Animals
- 311 - Animal Diseases
- 605 - Natural Resource and Environmental Economics

1. Outcome Target

Research - Increased knowledge and appreciation of sustainable production practices. Change in knowledge through publications and integration into extension programs. Target is number of projects.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :2 **2009 :** 2 **2010 :** 3 **2011 :**3 **2012 :** 3

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 121 - Management of Range Resources
- 132 - Weather and Climate
- 213 - Weeds Affecting Plants
- 605 - Natural Resource and Environmental Economics

1. Outcome Target

Research - Increase knowledge and appreciation of resource development on water quality. Outcomes will be change in knowledge through publications, bulletins, reports and long term to integrate research into extension programs. Target is number of projects.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 :2 **2009 :** 2 **2010 :** 2 **2011 :**2 **2012 :** 2

3. Associated Knowledge Area(s)

- 104 - Protect Soil from Harmful Effects of Natural Elements

- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 131 - Alternative Uses of Land

1. Outcome Target

Research - Increase public awareness on long term CO2 levels and integrate findings into extension programs. Target is number of projects.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 : 1	**2009 :** 1	**2010 :** 1	**2011 :** 1	**2012 :** 2

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 103 - Management of Saline and Sodic Soils and Salinity
- 121 - Management of Range Resources
- 131 - Alternative Uses of Land
- 132 - Weather and Climate

1. Outcome Target

Research - Increase producers ability to match resources to animal productivity. Target is number of projects.

2. Outcome Type : Change in Knowledge Outcome Measure

2008 : 1	**2009 :** 1	**2010 :** 1	**2011 :** 1	**2012 :** 1

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 123 - Management and Sustainability of Forest Resources
- 132 - Weather and Climate
- 136 - Conservation of Biological Diversity
- 306 - Environmental Stress in Animals
- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occuring Toxins, and Other Hazards Affecting Animals
- 605 - Natural Resource and Environmental Economics

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Factors external to the University of Wyoming College of Agriculture that could influence results include 1) any changes in state and regional economics, 2) any changes in public policy or regulations, 3) change in technology, and 4) information from special interest groups. 5) weather conditions – i.e. drought; 6) market conditions; 7)political/public policy considerations;
The following external factors can potentially have a large impact on this youth program and/or its results: • The general level of interest in current Wyoming natural resource issues (may affect the involvement of the potential youth audience) • Traditional 4-H leaders and parents commitment to animal and FCS projects.

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

1. Evaluation Studies Planned

- Retrospective (post program)
- Time series (multiple points before and after program)
- After Only (post program)
- Case Study
- Comparison between locales where the program operates and sites without program intervention

Description

Efforts will be made to assess the success of individual programs through educational efforts, publications, and peer review of the projects. Unstructured surveys will be conducted between program locales and those without program intervention. Feedback from media partners who broadcast radio and TV education materials will be gathered in addition to informal polls to determine public perception of natural resouces conducted on-line or with media partners. Testimonials from clientele. Monitor level of inquiries for assistance. Tracking permitted number of animal unit months in active management programs which are a result of extension activities and programs. Document the number of land managers that adopt rangeland management plans and monitoring practices. Evaluate success of clients in achieving land and animal management objectives and level of conflict pertaining to resource use.
Evaluation of natural resource programs targeted toward youth: Gathering testimonials. • Conduct spot surveys of audience. • Gather input from program volunteers who employed these materials. • Monitor natural resource 4-H program area project enrollment.

2. Data Collection Methods

- Sampling
- Journals
- Structured
- On-Site
- Observation
- Tests
- Unstructured

Description

A sample population will be surveyed to determine the benefits of the program and to make adjustments. The goal is to provide the best science possible. A variety of data collection methods will be used including sampling of participants in programs, surveys, informal and formal interviews with program participants. Both informal and formal methods of data collection will be used including documenting testimonials, tracking impact of monitoring practices and other program components.