

# 2017 Texas A&M University and Prairie View A&M University Combined Research and Extension Plan of Work

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## I. Plan Overview

### 1. Brief Summary about Plan Of Work

Texas is the second largest state in the nation with approximately 25 million citizens. The size and scope of Texas poses unique challenges with a wide range of diversity including both the agricultural and human sectors. The issues and needs of Texans vary by numerous factors and, in many cases, are complex. Texas is one of the most rural and most urban states in the nation with a majority of its citizens living in 20 of the 254 counties in the state.

#### **AgriLife Extension and AgriLife Research**

Texas A&M AgriLife Research (AgriLife Research) and the Texas A&M AgriLife Extension Service (AgriLife Extension) are the land-grant research and Extension components of the Texas A&M System and are headquartered in College Station, Texas. Since its beginning in 1876 as a land-grant institution, Texas A&M University has been a recognized leader in agriculture, food, and natural resources. Today, Texas A&M University, AgriLife Research, and AgriLife Extension continue this legacy through outstanding academic programs, important contributions to science through research and discovery, and life-long learning and youth development through Extension programs.

The work of both AgriLife Research and AgriLife Extension is guided by strategic plans. AgriLife Research developed a strategic plan to focus its resources on issues of highest importance as identified by agency scientists and other stakeholders. The major topical areas in the strategic plan are identified as priorities. These priorities are vital and equally important to ensuring a positive future for Texas and its citizens. The priorities are as follows:

- 1) Achieve resilience in food, fiber, and ecological systems through adaptive strategies.
- 2) Detect, monitor, and mitigate insect vector-borne diseases and invasive species.
- 3) Enhance agricultural information systems and expand their use through innovative applications.
- 4) Integrate basic and applied research at the nexus of food and health.

The Extension strategic plan is designed to enable the dissemination of research-based information to the citizens of Texas on issues of importance as identified through grassroots and other stakeholder input processes. This information is intended to allow the citizens of Texas to make sound decisions that will improve the overall quality of life for themselves and all Texans. The goals of the Extension strategic plan are:

- 1) Ensure a sustainable, profitable, and competitive food and fiber system in Texas.
- 2) Enhance natural resource conservation and management.
- 3) Build local capacity for economic development in Texas communities.
- 4) Improve the health, nutrition, safety, and economic security of Texas families.
- 5) Prepare Texas youth to be productive, positive, and equipped with life skills for the future.
- 6) Expand access to Extension education and knowledge resources.

Work on issues of importance in the state is a joint endeavor by both AgriLife Research and AgriLife

Extension. Research-based information is translated to practical best management practices and disseminated via multiple channels including the network of agents in all 254 counties in the state. Both AgriLife Research and AgriLife Extension conduct identification of issues and needs at multiple levels. Grassroots involvement by citizens, advisory groups, and commodity and industry groups are just a few of the ways this information is generated. Work with other states on areas of shared interest is also of high priority.

This Plan of Work addresses programs of primary importance in Texas. The programs selected also address federal initiatives for agriculture and natural resources, individuals and families, communities, and youth and adult leadership development.

**Cooperative Extension Program and Cooperative Agricultural Research Center**

This Plan represents the combined programs of the Cooperative Extension Program (CEP) and the Cooperative Agricultural Research Center (CARC) of the College of Agriculture and Human Sciences (CAHS) at Prairie View A&M University.

The College of Agriculture and Human Sciences (CAHS) is keen on the implementation of the USDA Texas StrikeForce Initiative, which is a program that aims to increase resources in rural communities by providing technical assistance to the 96 predetermined counties in the State that register on the 2010 census with consistent poverty. We are committed to rearrange our current resources around these designated counties over the next five years and provide necessary support and services to the underserved communities to improve their quality of life. Currently, the Cooperative Extension Program is present in 36 counties of which 18 are a part of the Strike Force initiative. While the CAHS provides services to all citizens of Texas as a Land Grant college, it particularly works to enhance economic opportunities for limited resource citizens in the state. Our endeavor will span over the ninety-six USDA StrikeForce counties to help enhance rural growth and opportunity.

The mission of the Cooperative Extension Program at Prairie View A&M University is to deliver research-based information and informal educational opportunities focused on identified issues and needs to Texans of diverse ethnic and socioeconomic backgrounds, giving primary emphasis to individuals with limited resources.

The mission of CARC is to conduct relevant, quality, focused, basic and applied research in the areas of agriculture, food, nutrition and human sciences. In addition, the vision of the CARC is to be a premier research agency providing scientific solutions to problems facing our dynamic society.

In order to address the national priority areas, counties performed needs assessments through their advisory committees. Collaboration with CEP, CARC and other departments working in partnership with staff in Family & Consumer Sciences, Agriculture & Natural Resources, Community & Economic Development, and 4-H & Youth Development to address and solve specific problems within the State of Texas. This Plan of Work includes stakeholders' input, merit/program review, planned programs, multistate, multicounty, and research and extension activities.

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	381.0	74.5	148.9	34.0
2018	381.0	81.5	148.9	35.0

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

Year	Extension		Research	
	1862	1890	1862	1890
2019	381.0	81.5	148.9	37.0
2020	381.0	83.5	148.9	38.0
2021	381.0	83.5	148.9	38.0

**II. Merit Review Process**

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

- Internal University Panel

**2. Brief Explanation**

**AgriLife Extension and AgriLife Research**

AgriLife Research and AgriLife Extension Administrative Leaders serve as merit reviewers for the Federal Plan of Work, the Federal Report of Accomplishments and Results, and associated grants and contracts. This team is comprised of senior administrative staff, as well as department heads and associate department heads for Extension. This leadership team is responsible for the oversight and management of all programs conducted by research and Extension faculty.

**Cooperative Extension Program and Cooperative Agricultural Research Center**

Extension programs initiated in the state of Texas are funded in whole or part from Smith Lever or Section 1444 and 14445 funds requiring a merit review process. The review panel is comprised of Cooperative Extension Program administrative leaders, Dean of the College of Agriculture, Cooperative Agricultural Research Center director, scientists, faculty, and Texas AgriLife middle managers. Particular focus to the plan is to determine if appropriate strategies are designated to reach the limited resource clientele mandated by the United States Department of Agriculture. The plans are reviewed based on needs assessment, planned programs, outcomes and evaluation. This combined leadership team is responsible for the oversight and management of all programs planned and implemented by Extension staff members.

All proposed research projects that are funded under either Evans-Allen, Experiment Station (Hatch), or otherwise, undergo a merit review process. Each proposal submitted for support is routed through an internal review committee for review and if deemed necessary, each proposal is routed through the University Committee on Research. The Research Director selects a set of individuals to serve as members of an internal review panel in consultation with the University's Vice President for Research. At minimum, three individuals review and evaluate each proposed project prior to approval for external submittal and/or internal fund allocation. Scientific peer review is incorporated in that all project reports including Current Research Information System must show evidence of external review. Written comments should be included with final proposals for campus routing. Routing proposals through quality control check points (Research

Director, Dean of the College and Vice President for Research) are designed to ensure that proposals meet RFP guidelines as well as meet scientific merit qualifications. All proposals are quality checked by our on campus Office of Sponsored Programs.

### III. Evaluation of Multis & Joint Activities

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

##### **AgriLife Extension and AgriLife Research**

As mentioned in the overview, both AgriLife Research and AgriLife Extension have strategic plans that serve as a guide to the development and implementation of programs that address critical issues. Stakeholder involvement was central to the development of these documents and stakeholder input will continue to guide the use of these documents over the next several years.

##### **Cooperative Extension Program and Cooperative Agricultural Research Center**

The planned programs resulted from the program development process. These programs were developed based on the critical issues and problems that were identified as priority and needing to be addressed. Each program addresses issues and problems that ranked high among stakeholders in the program development process. The Leadership Advisory Board in each county, which is composed of program committees and task forces, directs county staff in developing annual performance plans. These plans support state and national program priority goals.

The designated research programmatic focus areas target research issues that have been identified through strategic planning, including the stakeholder input process. Project activities will engage a continuous review/feedback process of evaluation with periodic updates.

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

##### **AgriLife Extension and AgriLife Research**

All programs and activities of AgriLife Research and AgriLife Extension are open to all people without regard to race, color, sex, disability, religion, age, or national origin. The programs listed in this plan of work address issues of importance to all Texans and are open to all citizens.

In some cases, programs are specifically targeted to under-served or under-represented populations with identified needs. A specific example of a program in this category is the Food Stamp Nutrition Education program, called Better Living for Texans (BLT) which addresses food insecurity through education about economical food buying. Other examples of programs that may be of particular interest include diabetes education, cancer prevention, and parenting education programs. In other cases, programs are designed to address a certain subject and are applicable to all clientele.

##### **Cooperative Extension Program and Cooperative Agricultural Research Center**

The planned programs of the Cooperative Extension Program at Prairie View A&M University are to reach under-served populations, and results will be based on the needs of these populations. In addressing the needs, clientele will show desired changes and improvements in their quality of life. Clientele will show positive changes in behavior and attitude, adopt recommended practice, increase household and farm incomes, improve living conditions and improve health status. Additionally, clientele will enhance their neighborhoods, communities

and overall situation through impact indicators included within the planned programs.

The overall goal of the CARC is to support the mission of the University, which is to serve a diverse ethnic and socioeconomic population, with special emphasis on the underserved. While the University's service area extends throughout Texas, the nation and the world, its primary target area is the Texas Gulf Coast Region, with primary emphasis on the Houston Northwest Corridor, an area that is heavily populated by individuals of diverse ethnic and socioeconomic backgrounds. Also, the CARC works closely with the CEP in programmatic planning/outreach activities.

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

For each planned program, assumptions are made and indicators of results are developed. These indicators include both outputs and outcomes geared toward county staff goals and expectations. The program leaders and content specialists will meet with respective staff members to thoroughly discuss each planned program.

The planned programs for the research components address issues that have measurable outcomes and impacts. Each program, with subsequent projects, is hypothesis-driven, which means that the results are measurable. Each project is required to demonstrate impact on an ongoing basis.

Each program listed also strives to attain results as they relate to social, environmental, and economic impacts.

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

Both 1862 and 1890 efforts provide effective and efficient programs based on the needs of the citizens of Texas are well documented. Both agencies believe in and welcome accountability standards, and readily provide information to various stakeholders as requested.

Trainings, videoconferences, and conference calls allow program leaders and county staff to discuss expectations and implementation of the planned programs. Program leaders address planned programs to identify sources that the county staff can draw on to assist with conducting some of the activities. The planned programs were not developed with the intent that the 1862 and 1890 Extension staff will provide all of the educational assistance. Other institutions, agencies and organizations will be involved in the implementation of the planned programs. This approach will increase staff members understanding of the planned programs and will involve outside resources resulting in improved effectiveness and efficiency.

Research planned programs will result in improved effectiveness for several reasons: 1) all projects are developed by teams with individuals having diverse backgrounds and interests.; 2) the process of continuous feedback/evaluation ensures effectiveness, efficiency and relevancy of the project; and 3) periodic external reviews also adds to the effectiveness of the program.

## **IV. Stakeholder Input**

### **1. Actions taken to seek stakeholder input that encourages their participation**

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals

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

**Brief explanation.**

**AgriLife Extension and AgriLife Research**

Both AgriLife Extension and AgriLife Research use multiple methods to reach stakeholder groups within the State of Texas. AgriLife Extension uses multiple sources of input from various stakeholders. These include local clientele, commodity/special interest groups, trend data monitored by specialists, various county committees, elected officials, and emerging issues. Teams of Extension and research faculty meet to analyze these issues, which lead to priority setting and development of programs to address the needs and issues raised by the various stakeholder groups and methods.

In 2015, AgriLife Extension held open forums to identify issues. These forums were held in each of the 254 counties. Issues identified were entered into a state-wide database and used to guide programming. Local Leadership Advisory Boards (LABs) meet to validate issues raised in the local stakeholder input process in the non-forum years. Leadership Advisory Boards serve as a conduit to local citizens and their needs. These boards are comprised of community opinion leaders charged with providing long-term visioning and advocacy for the local Extension program. Approximately 2,500 individuals serve on Leadership Advisory Boards across the state. This process continues as the local process to raise and validate issues. Another 10,000 citizens serve on program area committees, task forces, coalitions, and youth boards. These volunteers represent specific areas of the local program and are involved in issues identification, program development and delivery, evaluation and interpretation of programs, and management of other volunteers. These volunteers represent all 254 counties in the state.

AgriLife Research Administration, Department Heads, and Resident Directors regularly meet with the major agricultural industries and commodity groups in Texas. AgriLife Research has encouraged the public to participate in helping set priorities, assess current program and process effectiveness, and determine future directions. These processes were open, fair, and accessible to encourage individuals, groups, and organizations to have a voice, and treated all with dignity and respect. Stakeholders were initially identified by membership in listed organizations, though all events were public and were announced in the press and other written notice. Input from these events was captured by AgriLife Research participants, and in some cases, was published for further public use. Stakeholder input has always been critical to AgriLife Research processes and programs, and listed events and organizations continue as essential partners in setting the AgriLife Research agenda and recognizing and addressing emerging issues. A concentrated effort was done for small grains, corn, sorghum, and cotton resulting in a jointly developed strategic plan. AgriLife Research also met with leading animal health companies, large cow-calf operators, stockers, cattle feeders, and leaders in high-throughput sequencing to develop a research strategy to benefit the beef industry.

**Cooperative Extension Program and Cooperative Agricultural Research Center**

The Cooperative Extension Program (CEP) uses multiple methods to reach stakeholder groups within the State of Texas. Open forums are used at the county level to solicit input from clientele. Stakeholder input also comes from local clientele, commodity/special interest groups, county committees, and elected officials. Staff members also monitor trend data and emerging issues.

The CARC uses several input processes to obtain stakeholder input for purposes of designing research projects. Processes include: external advisory committees, joint field days, targeted workshops, seminars, short courses, internal committees, as well as ESCOP and USDA NIFA priorities.

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

**1. Method to identify individuals and groups**

- Use Advisory Committees
- Use Internal Focus Groups
- Use External Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Surveys
- Other (Meetings with various stakeholder groups)

**Brief explanation.**

The basis for Texas Extension's relevance in the State of Texas is grassroots involvement. Texas Extension engages the local Leadership Advisory Board in the identification and validation of new and emerging issues. Information from other stakeholders is obtained in various ways. Regular meetings are held with various commodity and interest groups. These groups provide input into programmatic decisions including development of new efforts, modification of existing efforts, and termination of programs that are no longer relevant. Finally, various subject matter groups employ the use of surveys and other needs assessment processes to gain information specifically about their subject area. Data from these processes are used to develop programs to address issues.

For research, the above listed groups and organizations provide invaluable input into the stakeholder process. Also, research maintains an active contact list and engages stakeholders on a regular and ongoing basis.

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

**1. Methods for collecting Stakeholder Input**

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

- Meeting specifically with non-traditional individuals
- Survey specifically with non-traditional individuals
- Other (Modified Nominal Group Process)

**Brief explanation.**

**AgriLife Extension and AgriLife Research**

Both AgriLife Extension and AgriLife Research use multiple methods to reach stakeholder groups within the State of Texas. AgriLife Extension uses multiple sources of input from various stakeholders. These include local clientele, commodity/special interest groups, trend data monitored by specialists, various county committees, elected officials, and emerging issues. Teams of Extension and research faculty meet to analyze these issues, which lead to priority setting and development of programs to address the needs and issues raised by the various stakeholder groups and methods.

Methods of data collection include surveys, focus group sessions, data collected as a result of program evaluations, expert panels, meetings with stakeholders, and open forum type meetings to solicit input. All data from all sources is considered when decisions are made regarding the future directions of Research and Extension efforts.

**Cooperative Extension Program and Cooperative Agricultural Research Center**

Cooperative Extension Program uses various stakeholder assessment processes. Meetings with stakeholders who give their input are an ongoing part of the process. Also, surveys are conducted in the four areas in which Extension focuses including Agriculture & Natural Resources, Family & Consumer Sciences, Community & Economic Development and 4-H & Youth Development. Individuals who complete these surveys help to provide and determine the educational directions for the state. The CARC maintains close ties with CEP, USDA, and related agency personnel while using ongoing work relations with local interest groups.

**3. A statement of how the input will be considered**

- In the Budget Process
- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Staff Hiring Process
- In the Action Plans
- To Set Priorities
- Other (Strategic plans)

**Brief explanation.**

**AgriLife Extension and AgriLife Research**

The basis for AgriLife Research and AgriLife Extension's relevance in the State of Texas is grassroots involvement. AgriLife Extension has utilized Open Listening Sessions as part of the grassroots Texas Community Futures (TCFF) Process in the past. These sessions provide local clientele the opportunity to voice their opinion on issues of importance to their lives and the lives of others in their community. These sessions were held again in 2015.



Local Leadership Advisory Boards (LABs) lead efforts to raise new and validate current issues being addressed in local communities. The process allows for flexibility in approaches based on community resources. Face-to-face meetings and an online data collection effort are part of the options offered. Approximately 2,500 individuals serve on Leadership Advisory Boards across the state. In addition, another 10,000 citizens serve on program area committees, task forces, coalitions, and youth boards. These volunteers represent specific areas of the local program and are involved in issues identification, program development and delivery, evaluation and interpretation of programs, and management of other volunteers. These volunteers represent all 254 counties in the state.

Both AgriLife Extension and AgriLife Research utilize various methods to analyze and incorporate input from stakeholders. Teams of Extension and research faculty meet based on need to analyze these issues, which leads to priority setting and development of programs to address the needs and issues raised by the various stakeholder groups and methods. Strategic plans and roadmaps for AgriLife Research and AgriLife Extension have been developed to guide our efforts.

#### **Cooperative Extension Program and Cooperative Agricultural Research Center**

Data from the various stakeholder input processes are used to direct programming efforts at the local, district, regional, and state levels. Validation of issues is determined by leadership group's bi-annually. This process determines the future of new program focus or continuation of existing program thrusts. The Leadership Advisory Board (LAB) is involved to ensure that local needs are addressed with relevant educational methods. Other advisory groups also support the validation of county issues process. Local and state staff develop action plans to address issues of importance. Within the CARC, information collected through the stakeholder process is maintained in a database and is reviewed on a continuing basis by discussion groups and/or scientists in developing project activities.

**V. Planned Program Table of Content**

S. No.	PROGRAM NAME
1	Economics and Management for Sustainable Agriculture
2	Livestock Production
3	Crop and Forage Production
4	Water & Natural Resources Management
5	Range Management
6	Climate Change
7	Sustainable Energy
8	Community Resource and Economic Development
9	Chronic Disease, Health, and Wellness
10	Childhood Obesity
11	Food Safety
12	Global Food Security and Hunger
13	Fostering Strong Families
14	Life Skills for Youth (includes Character Education and Leadership)
15	Adult Leadership and Volunteer Development

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

### **Program # 1**

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

Economics and Management for Sustainable Agriculture

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

##### **AgriLife Extension and AgriLife Research**

The focus of the Economics and Management program is to provide research-based information to clientele to minimize and mitigate risk inherent in the food and fiber system in Texas. In response to these needs, AgriLife Research and AgriLife Extension have coordinated the development and delivery of multifaceted programs in policy analysis, risk assessment, risk management, and in-depth management/marketing education. In the past, policy, management, and marketing changes were evaluated based on average results. Research, applied-research, and educational programs are focused on: (1) intensive education in group settings; (2) use of master volunteers and county Extension personnel to expand extension and research communication; and (3) one-to-one assistance in financial and risk management.

The Economics and Management program supports the AgriLife Research Strategic Priority for achieving resilience by enhancing competitiveness, prosperity, and sustainability of urban and rural agricultural industries, and the AgriLife Extension Roadmap goal of ensuring a sustainable, profitable, and competitive food and fiber system in Texas.

##### **Cooperative Extension Program**

Programs conducted by the Cooperative Extension Program at Prairie View A&M University will be geared towards the needs of small scale and limited resource farmers and will focus on farm financial management, business planning and the marketing of agricultural products.

In the area of Economics of Agricultural Production and Farm Management, the Cooperative Extension Program will assist small scale agricultural producers by conducting economic analyses that will assist them to be economically profitable and sustainable. Educational programs focusing on strategies for farm profitability and sustainability will be developed and used in the delivery of extension programs to small scale and limited resource farmers.

The Cooperative Extension Program will conduct programming in the areas of farm and home planning including farm income, debt and spending as it addresses the area of Business Management and Finance, and Taxation. Educational programs, events, activities and technical assistance will be developed and implemented to address the relevant issues and needs of limited resource farm families.

Educational programs focusing on alternative and niche markets will be provided to small scale and limited resource agricultural producers. Information about selling high quality products at the local and regional levels will be addressed. Other items included in the area of marketing and distribution practices will focus on gaining an understanding of the agricultural distribution network, better understanding of economic policy and the role that family farms play in the global marketing of agricultural products.

This program provides technical and educational assistance to farmers and ranchers by assisting them in the identification of efficient agri-business practices, proper business management, and accounting/bookkeeping.

Increase community awareness of programs by way of mass marketing, social networking, and

information delivery on small business and community and economic development opportunities.

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

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

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

**6. Expending other than formula funds or state-matching funds :** No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	0%	80%	0%	0%
602	Business Management, Finance, and Taxation	25%	10%	25%	0%
604	Marketing and Distribution Practices	25%	10%	25%	0%
605	Natural Resource and Environmental Economics	10%	0%	10%	0%
606	International Trade and Development Economics	10%	0%	10%	0%
608	Community Resource Planning and Development	5%	0%	5%	0%
610	Domestic Policy Analysis	25%	0%	25%	0%
	<b>Total</b>	100%	100%	100%	0%

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

1. Situation and priorities

**AgriLife Extension and AgriLife Research**

Risk is inherent at all levels of the food and fiber system. For the Texas food and fiber system to become more competitive, profitable, and sustainable (in light of changing agricultural and trade policies and highly volatile commodity and input prices), farmers, ranchers, and organizations-plus the communities that are dependent upon agriculture--must be better able to weigh the risks and projected impacts of alternative decisions on profitability and competitiveness. Managing the increased price and income risk is key to the future economic success of production agriculture and agribusiness firms in Texas. As economic stress intensifies, risk management-knowing the probabilities associated with what to do and what not to do--becomes even more important to the long term goal of a profitable and sustainable agriculture.

In response to the described need, AgriLife Research and AgriLife Extension will coordinate the development and delivery of multi-faceted programs in policy analysis, risk assessment, risk management, and in-depth management/marketing education. In the past, policy, management, and marketing changes were evaluated based on average results. But, in Texas, averages do not tell the story-the risk of upside and downside swings also must be evaluated for long-term survivability. Educational and applied research programs are focused on: (1) intensive education in group settings; (2) use of master volunteers and county Extension personnel to expand Extension and research communication; and (3) one-to-one

assistance in financial and risk management.

### **Cooperative Extension Program**

The rate of growth in world food production, which has been slowing down for the past three decades, will continue to decelerate. It dropped from 3 percent a year in the 1960s to 2 percent in the 1980s, and is expected to continue to fall to 1.8 percent. World population, meanwhile, is forecast to increase to around 7 billion, 94 percent of the increase being in developing countries. In order to keep up with the growth in population, farmers and ranchers are going to have to produce more by being efficient and knowledgeable in Ag-production. Agri-business training and business management is essential if farmers and ranchers are going to be effective in increasing their production. Profitable small farm operations are becoming increasingly rare and starting to look less favorable among the younger/next generation farmers.

Agriculture is a major component of the economy in Texas. Texas has 247,437 farms which sell \$21,001,074 in agricultural products annually. Small and limited resource farms (e.g., farms generating less than \$10,000 in annual sales) constitute approximately 71.5% of these farms, according to the 2007 Census of Agriculture (USDA, NASS, 2007).

Small and limited resource farmers are a large and important part of the state and national economy. Nearly 40% of the value of farm products produced in the United States is still generated by small farms. According to the 2002 U.S. Census of Agriculture, 39% of farms had sales of less than \$2,500. These farms are engaged in a variety of crop and livestock enterprises, including traditional field crops, beef, and new alternative crops targeted to niche markets. Small farmers have numerous challenges, some of which are due to the lack of size, lack of knowledge about enterprise selection appropriate to financial resources and lack of skills. The Cooperative Extension Program will continue to address problems associated with enterprise and market selection and optimal resource allocation in production, and risk management. Furthermore, extension and outreach programs will be designed with the ultimate goal of enhancing the economic viability of small and limited resource farms and families. Some major factors affecting small farmers and ranchers are poor management skills, inability to maintain cash flow, past racial discrimination and lack of information to make informed decisions resulting in a lack of effective management. Therefore, farm business and financial management are needed to address these issues.

Small farm families face barriers to entry into commercial markets. These barriers are mainly due to the lack of knowledge of market structure requirements of values and size as well market demand. These farm families lack knowledge of marketing strategies to enhance farm income.

Programs are now being marketed through mass media outlets such as Facebook, twitter, websites, and radio. Statistics below show that social and media outlets are becoming increasingly appealing in reaching Americans.

## **2. Scope of the Program**

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

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

## **1. Assumptions made for the Program**

### **AgriLife Extension and AgriLife Research**

Assumptions include: 1) continued funding to maintain the critical mass of the Agricultural Economics Extension and Research faculty and staff, and that the retiring faculty will be replaced with top quality new faculty from Universities across the U.S. and from other countries; 2) audiences will be targeted and provided with the science based training and applied research results in the areas of management, marketing, policy, international trade, community and resource economics that they need to improve their knowledge level in these subject areas to enhance their ability to remain economically viable, competitive, and profitable; 3) program focus and training methods will continue to evolve based on evaluation results and research findings.

### **Cooperative Extension Program**

The implementation of this program is expected to get farmers, ranchers, agri-business owners, and rural community members to understand the financial aspect of modern farming, which often can include complex accounting and bookkeeping. Staff will assist agri-businesses with farm management, price trends, and latest developments that affect the efficiencies and profitability of their business. Proper management begins with proper accounting of expenditures and profit margins, which will assist in the identification of efficient agri-business practices. Staff will also train rural communities on profitable opportunities through community gardens, farmers markets, and farmers Co-op development.

Many small-scale farmers and ranchers in Texas depend upon the technical assistance provided by Land-Grant institutions, non-profit groups, state and federal agencies. Small farmers and ranchers are continuing to experience financial difficulties, which led to bankruptcy, foreclosures and stressful emotional conditions.

The Cooperative Extension Program at Prairie View A&M University will continue to address these issues and focus on the needs of limited resource farmers. Focusing on these specific needs will help this audience improve their lives. By providing this type of assistance, it is assumed that farmers will be more profitable, decrease debt and improve business management skills. Improvements in these areas will help them to increase their chances of getting loans and other assistance made available by federal and state agencies.

In order to capitalize on the use of media technology by community members, staff will use social media outlets such as Facebook, twitter, LinkedIn, Internet radio, as well as FM radio to promote programs that will increase the overall standard of living for underserved Americans.

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

### **AgriLife Extension and AgriLife Research**

Texas producers, agribusiness and other business professionals, and landowners will become more knowledgeable of the approaches to assess and manage the risk and rewards in agricultural, natural resources, and other community based business operations.

Texas producers, agribusiness and other business professionals, and landowners will make informed decisions based on sound science based information that will enhance their ability to remain economically viable, competitive, and profitable while maintaining and sustaining natural resources.

### **Cooperative Extension Program**

Small farmers, ranchers, agribusiness owners, and rural community members will implement efficient and effective business practices that can decrease their expenses and increase production and profits.

The overall, ultimate goal is to enhance the economic viability of small and limited resource farm families

by strengthening their technical knowledge and skills and economic decision-making so that they can contribute fully to the agricultural economy.

**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
2017	15.0	4.0	10.0	0.0
2018	15.0	4.0	10.0	0.0
2019	15.0	4.0	10.0	0.0
2020	15.0	4.0	10.0	0.0
2021	15.0	4.0	10.0	0.0

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

**1. Activity for the Program**

**AgriLife Extension and AgriLife Research**

Numerous activities, events and experiences will be conducted to address the needs of producers and other clientele in the area of economics and management. These include but are not limited to workshops, one-on-one intervention, marketing clubs, cooperatives, popular press articles, extension publications, and other methods as needed. These educational approaches focus on the identified needs of those who participate in our programs.

Work of AgriLife Research and AgriLife Extension is conducted jointly where research-based information is generated and then transferred to clientele. This work is conducted primarily on campus with dissemination efforts both on campus and at various research and extension centers across the state.

Collaborative efforts are also an important part of this area. Work with various commodity groups and other agencies are routinely conducted by both AgriLife Research and AgriLife Extension faculty. Examples of this work include cooperating with Grain and Livestock organizations on risk management and Biofuels programming and the Texas FSA office on Farm Program education, and price forecasts for lending purposes for the coming year.

**Cooperative Extension Program**

- Workshops and trainings will be conducted for both staff and clientele
- Conduct educational programs
- Provide one-on-one consultations
- Assist communities in rural viability assessments

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

**Extension**

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Other 1 (Applied Research)</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites other than eXtension</li> <li>● Other 1 (Popular Press Articles)</li> </ul>

**3. Description of targeted audience**

**AgriLife Extension and AgriLife Research**

The target audience for the economics and management program includes all Texas producers. Specifically, commercially viable agricultural producers are targeted, but additional efforts are targeted to small scale operators, part-time producers, new/young landowners/producers, and commodity groups.

The target audiences are very diverse in knowledge, skills, attitudes, and aspirations to learn and adopt important strategies to be successful. Therefore, the methods used in this area vary depending on which audience is being addressed.

**Cooperative Extension Program**

Our programs will assist a diverse audience, with emphasis on the under-served, hard to reach, and have limited social and economic resources to improve their quality of life; this will include farmers and ranchers, private land and forest owners, military veterans and their families.

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

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

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

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



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

### **1. Output Measure**

- # of group educational sessions conducted.
  - # of research-related projects.
  - # of one-on-one technical assistance/consultations.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

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

O. No	Outcome Name
1	Percent of producers that report a savings in money or increased profit by best management practices adopted.
2	% of target audience that reports an increased knowledge of economics and management strategies.
3	Number of producers who conduct whole farm or ranch risk assessment evaluations.
4	% producers that reports an increased knowledge on farm financial management plans and marketing plans to sustain their agribusinesses.
5	Number of producers receiving financial assistance thru USDA/FSA and other traditional Ag lenders.

**Outcome # 1**

**1. Outcome Target**

Percent of producers that report a savings in money or increased profit by best management practices adopted.

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

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

- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices
- 605 - Natural Resource and Environmental Economics
- 610 - Domestic Policy Analysis

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

- 1862 Extension
- 1862 Research

**Outcome # 2**

**1. Outcome Target**

% of target audience that reports an increased knowledge of economics and management strategies.

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

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

- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices
- 605 - Natural Resource and Environmental Economics

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

- 1862 Extension
- 1862 Research

**Outcome # 3**

**1. Outcome Target**

Number of producers who conduct whole farm or ranch risk assessment evaluations.

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

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

- 602 - Business Management, Finance, and Taxation
- 604 - Marketing and Distribution Practices
- 610 - Domestic Policy Analysis

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

- 1862 Extension
- 1862 Research

**Outcome # 4**

**1. Outcome Target**

% producers that reports an increased knowledge on farm financial management plans and marketing plans to sustain their agribusinesses.

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

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

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

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

- 1890 Extension

**Outcome # 5**

**1. Outcome Target**

Number of producers receiving financial assistance thru USDA/FSA and other traditional Ag lenders.

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

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

- 601 - Economics of Agricultural Production and Farm Management
- 604 - Marketing and Distribution Practices

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

- 1890 Extension

### **V(J). Planned Program (External Factors)**

#### **1. External Factors which may affect Outcomes**

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

#### **Description**

All of the factors listed above could have a potential impact on the outcomes of this program. Negative effects are likely to be caused from any of the factors listed. Changes in appropriations, public policy, and government regulations could have either a negative or positive effect on the program. Part of the evaluation efforts of this program will include monitoring for the potential effect of these factors and determining the extent to which they do affect the program.

### **V(K). Planned Program - Planned Evaluation Studies**

#### **Description of Planned Evaluation Studies**

The common strategies employed for evaluation studies involve the use of both pre/post and retrospective studies. Use of these strategies will be contingent upon the type of data to be collected and the target audience.

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

### **Program # 2**

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

Livestock Production

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

##### **AgriLife Extension and AgriLife Research**

Texas ranks first in the nation in total livestock value and also has the broadest spectrum of producers and variation in production environments. High production costs and variable sale receipts for all livestock species necessitates adoption of best management practices to efficiently produce livestock and their resulting end-products that are cost-competitive with consumer alternatives while meeting the food quality and safety standards expected by our society. Educational programs are needed to increase producer awareness of consumer concerns and implementation of advancements in research proven production practices and developments in technologies to meet those needs while increasing net returns from livestock operations. Research and education programs will focus on livestock genetics, nutrition, reproduction, both enhanced value and cost effective best management practices, and how producers can increase profitable production efficiency while still producing high quality, safe, wholesome end products. Specific livestock recommended management practices in selection and use, nutrition, reproductive physiology, health, identification and meat science will be emphasized. Other factors that influence product acceptability in the market such as marketing methods and food safety issues will be stressed. The target audience is composed of beef cattle, horse, dairy, sheep, goat and swine producers, commodity group leadership, Extension educators and youth enrolled in 4-H and FFA livestock projects.

The Livestock and Meat Quality, Safety, and Profitability program supports the AgriLife Research Strategic Priorities for achieving resilience and integration of research at the nexus of food and health, and the AgriLife Extension Roadmap goal of ensuring a sustainable, profitable, and competitive food and fiber system in Texas.

##### **Cooperative Extension Program and Cooperative Agricultural Research Center**

This program will focus on developing sustainable farming/ranching operations focusing on increasing the health and productivity of livestock through optimizing nutrition, and reproduction. The purpose is to ensure that these agricultural operations are not only profitable but that they are also friendly to the community and the environment. The program will focus on assisting farmers and ranchers to become more diversified in their production and marketing strategies thereby increasing their viability, competitiveness, and sustainability. Educating farmers and ranchers on risk management tools to better address risk related issues they encounter. Assist with 4-H and youth development activities related to agriculture helping to foster the next generation on agriculturist.

In general, these alternatives and sustainable production practices will enhance profitability of farming operations and minimize fluctuation in farm income to improve the economic well being which will improve the quality of life of limited-resource farmers.

Research programs will advance the science of animal production and use this information to improve the livelihoods of the people in Texas, the Gulf Coast region and developing countries abroad. Our long-term goals are to: a) provide recommendations for sustainable forage based production and management systems, b) make limited resource farmers and ranchers aware of the financial benefits of proper breeding and reproductive management, and c) provide students in the College of Agriculture and Human Sciences experiential learning experiences in the animal sciences and biotechnology. In general, these alternatives and sustainable production practices could enhance profitability of farming operations and minimize

fluctuation in farm income to improve the economic well being and improve the quality of life of limited-resource farmers.

- 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 : No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	10%	20%	10%	20%
302	Nutrient Utilization in Animals	25%	20%	10%	10%
303	Genetic Improvement of Animals	5%	10%	5%	10%
304	Animal Genome	0%	0%	10%	10%
305	Animal Physiological Processes	0%	0%	0%	20%
306	Environmental Stress in Animals	5%	0%	5%	0%
307	Animal Management Systems	20%	20%	15%	20%
308	Improved Animal Products (Before Harvest)	20%	0%	15%	0%
311	Animal Diseases	0%	10%	10%	0%
312	External Parasites and Pests of Animals	0%	10%	5%	0%
313	Internal Parasites in Animals	5%	10%	5%	10%
315	Animal Welfare/Well-Being and Protection	10%	0%	10%	0%
	<b>Total</b>	100%	100%	100%	100%

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

1. Situation and priorities

**AgriLife Extension and AgriLife Research**

Texas ranks first nationally in total cattle/calves, sheep/goats and horses. Additionally, Texas now ranks sixth nationally in milk production. Nationwide, some 15 % of cattle and horses are in Texas. Hair sheep is

replacing traditional wool sheep, and goats for brush control and meat production represent changing markets related to incentive programs, ethnicity and agricultural exemption. Well over 75,000 swine, lambs, goats, cattle and horses are owned and exhibited by youth annually in Texas. Priorities include livestock ownership/production for food, profit, land management, youth development, quality of life and recreation. Demand exists for owner/producer/user knowledge, skills and management tools related to the selection, evaluation, breeding, development/use and marketing of livestock and related products. Quality, safety and consistency are key challenges. Best management practices based on research, industry needs and industry practices apply to adult and youth livestock industry participants, commodity and corporate groups. Sustainability and resilience are becoming major drivers of production systems as large corporate buyers have become more interested and engaged with upstream production practices in the supply chain. Anti-microbial resistance is also a growing concern to the industry and consumers.

### **Cooperative Extension Program and the Cooperative Agricultural Research Center**

A majority of the agricultural producers that receive assistance from the Cooperative Extension Program are small farmers with less than 50 acres of land. In Texas there are over 247,000 farms using 130 million acres of land (13% of all US farmland). Ninety four thousand (38%) of the 247,000 farms are comprised of 50 acres or less. Two hundred and three thousand (82%) of the 247,000 farms in Texas earn \$25,000 or less per year. Thus our target audience, small farms and limited resource producers, is a large and important contributor to the overall agricultural picture. Our program targets beginning farmers and ranchers, limited resource, socially disadvantaged, and a new audience military veteran. Many of our clients' work full time, or are retired and the farm is a second source of income. A low-input sustainable agricultural system is needed to assist these producers get optimum production in the most economical manner. Furthermore, Texas still leads the nation with approximately 850,000 meat goats and ranks fourth with approximately 18,000 dairy goats. Small ruminants will become more popular on small acreages as they contribute to land management and also as meat sources. Sustainable methods are being promoted that will assist these livestock operations facing problems such as lack of forage, inadequate rotational grazing techniques, poor selection and management of breeding stock, and problems of controlling animal diseases and parasites.

## **2. Scope of the Program**

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

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

### **1. Assumptions made for the Program**

#### **AgriLife Extension and AgriLife Research**

Beef will continue to be in demand as a nutrient dense food with gross output exceeding \$5 billion annually. Therefore, interest and need for education related to livestock and product utilization, quality and safety, is expected to remain high. The dairy industry is moving in the state as old issues are replaced by new challenges and opportunities. Youth will continue to choose livestock project involvement for character education and life skills, and these youth represent the base for livestock production in the future. Small ruminants will become more popular on small acreages as they contribute to land management and also as meat sources.



**Cooperative Extension Program and the Cooperative Agricultural Research Center**

This program assumes that with contributions from the Cooperative Extension staff and the Cooperative Agricultural Research Center better production practices will be identified and used for the profitable production of fruits, vegetables, livestock and other alternative crops. To ensure full participation of the stakeholders, applied research will be conducted with socially disadvantaged farmers. This applied research will allow the farmers to work closely with Cooperative Extension staff while gaining hands-on experience in sustainable agriculture. This training will be in addition to the workshops, seminars and other educational programs provided to the farmers. The planning and execution of the plans will continue to be in collaboration with clientele.

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

**AgriLife Extension and AgriLife Research**

Goals are to enhance sustainability by providing research and educational opportunities in 7 major areas: Beef Quality Assurance and Best Management Practices for the Cattle and Meat Industries, Meat Quality and Safety, Pork Quality Assurance/Quality Counts, Sustainable Enhancement of Dairy Profitability, Meat Goat and Hair Sheep Initiatives, Internal Parasite Management for Enhanced Production of Small Ruminants, and Horse Production, Management and Use.

**Cooperative Extension Program and the Cooperative Agricultural Research Center**

Goals are to train agricultural producers in the use of alternative enterprises and production systems that will help them maximize the quality and quantity of goods produced. The impact of different cropping/production systems and cultural practices will be used to increase farm profitability. The overall goal of the Animal Systems focus area is to increase the efficiency of producing livestock with an emphasis on small ruminants (goats). This goal will be accomplished through research activities that generate scientific and technical information on animal production practices that are applicable locally, nationally and internationally.

**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
2017	35.0	7.0	20.0	9.0
2018	35.0	7.0	20.0	9.0
2019	35.0	7.0	20.0	9.0
2020	35.0	7.0	20.0	9.0
2021	35.0	7.0	20.0	9.0

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

**1. Activity for the Program**

**AgriLife Extension and AgriLife Research**

Research as well as group and individual education will be ongoing across the 7 key subject matter/commodity areas. Methods of education include public meetings, individual support, printed and

video/DVD materials and web-based materials. Collaboration with breed associations, commodity groups and corporations will target research and educational needs of a diverse livestock industry across the state, involving both youth and adults.

**Cooperative Extension Program and the Cooperative Agricultural Research Center**

Cooperative Extension will:

- Conduct educational and training programs
- Conduct subject matter workshops/field days/ tours
- Provide one-on-one technical assistance/consultations
- Assist clients with development of farm plans
- Hold on-farm demonstrations
- Assist clients in identifying assistance within USDA

The collaborative efforts of research staff are contained within three main research focus areas:

**Pasture based production strategies for the Texas Gulf Coast:** Rising grain costs are pressuring animal production systems into adopting more forage production systems. Texas' climate allows for continuous grazing strategies. Two main factors affecting profitability of pasture based production systems are predators and internal parasites. We propose to test the feasibility of using Serecea lespedeza and other high tannin legume plant varieties with anti-parasitic properties, as a management tool. SL will be used initially because of its seed availability and reported growing abilities in our region. Other varieties to be checked include birdsfoot trefoil, sainfoin and chickory. Our final recommendations will ultimately be determined by economic factors including seed costs, plant yields, and, ultimately on effectiveness in controlling parasite infections in live goat trials.

**Increasing the efficiency of artificial insemination and embryo transfer:** We are focusing our efforts in the areas of breeding and reproductive management. Technologies in these areas are moving rapidly and hold great promise to reduce production costs and increase genetic merit and farm profits. Studies will defining factors that influence male fertility and cryopreservation of semen for use in AI. Studies in the female will center on defining the window of receptivity for early embryonic development and improvements in embryo transfer efficiencies.

**The impact of body condition score in reproductive performance, milk production and offspring performance in Alpine goats.** The overall goal is to: 1) Develop parameters of body condition score in goats and correlate that with actual fat content, 2) Develop a technique to assess internal fat in goats, 3) Develop a model to predict performance of meat and dairy goats and 4) Investigate differences between goats on pasture vs. supplemented.

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

**Extension**

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● One-on-One Intervention</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites other than eXtension</li> </ul>

**3. Description of targeted audience**

**AgriLife Extension and AgriLife Research**

The target audience is composed of beef cattle, horse, dairy, sheep, goat and swine

producers/owners/users, commodity group leadership, associations and registries, and youth enrolled in 4-H and FFA livestock projects.

**Cooperative Extension Program and the Cooperative Agricultural Research Center**

Beginning Farmers/Ranchers; Limited Resource Farmers/Ranchers; Socially Disadvantaged Farmers/Ranchers, and Military Veterans. 4-H and Youth associated with this audience. Undergraduate students in the College of Agriculture and Human Sciences.

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

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

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

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

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

**1. Output Measure**

- # of group educational sessions conducted.
- # of research-related projects.
- # of one-on-one technical assistance/consultations.
- # of graduate/undergraduate students involved in research projects.

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

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

O. No	Outcome Name
1	% of livestock owners/producers that adopt or plan to adopt best management practices to improve quality and profitability.
2	% of livestock owners/producers/commodity group representatives that report increased knowledge of best management practices to improve quality and profitability.
3	% of livestock owners/producers that report a savings in money or increased profit by best management practices adopted.
4	% of producers who gain knowledge and skills to implement herd health best management practices.

### **Outcome # 1**

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

% of livestock owners/producers that adopt or plan to adopt best management practices to improve quality and profitability.

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

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

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 313 - Internal Parasites in Animals
- 315 - Animal Welfare/Well-Being and Protection

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

- 1862 Extension
- 1862 Research

### **Outcome # 2**

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

% of livestock owners/producers/commodity group representatives that report increased knowledge of best management practices to improve quality and profitability.

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

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

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 313 - Internal Parasites in Animals
- 315 - Animal Welfare/Well-Being and Protection

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

- 1862 Extension
- 1862 Research

#### **Outcome # 3**

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

% of livestock owners/producers that report a savings in money or increased profit by best management practices adopted.

##### **2. Outcome Type : Change in Condition Outcome Measure**

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

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 313 - Internal Parasites in Animals
- 315 - Animal Welfare/Well-Being and Protection

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

- 1862 Extension
- 1862 Research

#### **Outcome # 4**

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

% of producers who gain knowledge and skills to implement herd health best management practices.

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

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

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 306 - Environmental Stress in Animals

- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 312 - External Parasites and Pests of Animals
- 313 - Internal Parasites in Animals
- 315 - Animal Welfare/Well-Being and Protection

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

- 1890 Extension
- 1890 Research

### **V(J). Planned Program (External Factors)**

#### **1. External Factors which may affect Outcomes**

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

#### **Description**

Livestock ownership, production and use in Texas has been influenced by natural disasters such as hurricanes, floods, drought and wildfires. Routine management of livestock has been influenced and significant need exists for education in emergency and alternative management plans. Production costs and incentives for livestock production, management, and use are influenced by economic changes. Higher fuel prices, ag exemptions, feed costs and health care costs are all factors. Public policy changes and government regulations challenge educators to provide up-to-date, neutral information that helps livestock participants make decisions. Population shifts and use of available land for productive and meaningful livestock production bring opportunities and challenges to livestock owners/producers/users and the associations/corporations/groups that make up this diverse industry.

Meaningful program content is dependent on an awareness of industry and producer needs and trends over the short and long term. These needs are determined by maintaining contacts with industry, producers, consumers, and state and federal organizations. Program input/design, implementation and output assessment will be monitored to allow for future directions. This requires a close working relationship between extension, research and academics within and external to our own university structure as well as with local, state and federal agencies. Measurable outcomes of program inputs will be monitored and evaluated continuously in order to determine effectiveness in accomplishing program goals and objectives

### **V(K). Planned Program - Planned Evaluation Studies**

#### **Description of Planned Evaluation Studies**

Outcome measures include pre-post knowledge assessment, adoption of best management practices and elimination of non-beneficial practices, and change in confidence/competence. Changes in time and money spent/saved/invested for livestock production will be measured in selected areas.

A data collection strategy will be conducted during and at the end of each year. Additionally, data collected during the monthly report process from Extension personnel will be used.



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

### **Program # 3**

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

Crop and Forage Production

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

##### **AgriLife Extension**

The Crops and Forage Production program focuses on crop genetic improvement and the development of production systems to minimize crop inputs, and maintain sustainable agricultural production systems. Specifically, in Texas, the crops most targeted are cotton, wheat, sorghum, corn, rice, soybeans, peanuts, and forages. Interdisciplinary work is conducted with entomology, plant pathology, agricultural engineering, and soil and crops sciences. The Extension focus is to prove new technologies on to the farm or ranch through field demonstrations and applied research, educate farmers and ranchers on proven technologies as well as bringing the products of research to bear on problems identified by stakeholders.

##### **AgriLife Research**

The Crop and Forage Production Systems program supports the AgriLife Research Strategic Priorities for achieving resilience, mitigating vector-borne diseases and invasive species, enhancing agricultural information systems; and the AgriLife Extension Roadmap goal of ensuring a sustainable, profitable, and competitive food and fiber system in Texas. AgriLife Research uses an array of tools, ranging from molecular technologies to applied, systems research to bring the products identified in basic research to the field as rapidly as possible. In many cases this requires public-private partnerships to share resources and to get new technologies in the production pipeline as rapidly as is possible. Emerging technologies such as unmanned aerial systems and remote sensing will be employed to augment existing tools and techniques for crop improvement and sustainable production systems.

##### **Cooperative Extension Program and Cooperative Agricultural Research Center**

Programs conducted by the Cooperative Extension Program at Prairie View A&M University will be geared towards the needs of small scale and limited resource farmers and will focus on fruit and vegetable crop production in an effort to improve the income situation of the target clientele. Variety trials, fertilizer treatments and different cultural practices will be investigated to determine the relationship between plants and growth factors, appropriate crop management practices and pest control methods. The Cooperative Extension Program will conduct programming in the areas of the development of community gardens in both urban and rural areas to address the needs of the clientele. We will also train limited resource producers on best management practices to improve the quality of forage and hay.

The plant systems research group will focus on vegetable and fruit crops, medicinal plants, and leguminous crops production programs. The research activities will include genetic improvement, chemical/biochemical evaluation of plant products as well as best management practice for crop production. Which will improve the income situation of the target limited resource clientele as identified by the Cooperative Extension Program.

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

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

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

**6. Expending other than formula funds or state-matching funds :** No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%	20%	10%	20%
201	Plant Genome, Genetics, and Genetic Mechanisms	0%	10%	5%	20%
202	Plant Genetic Resources	10%	20%	10%	20%
205	Plant Management Systems	20%	0%	20%	0%
206	Basic Plant Biology	0%	10%	5%	10%
211	Insects, Mites, and Other Arthropods Affecting Plants	10%	0%	10%	0%
212	Diseases and Nematodes Affecting Plants	10%	0%	10%	0%
213	Weeds Affecting Plants	10%	20%	10%	20%
216	Integrated Pest Management Systems	30%	20%	20%	10%
	<b>Total</b>	100%	100%	100%	100%

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

**1. Situation and priorities**

**AgriLife Extension and AgriLife Research**

Environmental stresses, crop pests and global market forces make profitable and sustainable production of crops and forages a continuing challenge. It is through understanding and adoption of new technologies that improve productivity, quality, profitability and global competitiveness of crop and forage production systems that Texas farmers and ranchers will enhance their competitive position to other producers around the world. The target audience includes farmers and ranchers who produce field crops and forages and livestock in Texas.

Research and outreach educational programs through AgriLife Extension and AgriLife Research have had significant impacts on the production and economic success of growers in Texas. It is expected that these same impacts as well as those for emerging issues will continue. Through local, regional and statewide programs, Texas producers are the recipients of timely, sound and objective information to enhance their production success.

**Cooperative Extension Program**

A majority of the agricultural producers that get assistance from the Cooperative Extension Program are

small farmers with less than 50 acres of land. Most lack the proper equipment and other resources to grow crops. Many of these socially disadvantaged farmers work full time, and the farm is a second source of income. A low-input sustainable agricultural system is needed to assist these producers get optimum production in the most economical manner.

The South lends itself to many sustainable alternatives because of its mild climate and long growing season. Fruit and vegetable crop productions have been suggested as agricultural alternatives that could improve the income situation of small-scale farmers who utilize Cooperative Extension. Many of these individuals are limited resource farmers seeking methods to improve their crop production potential and profitability. Studies have shown that low-input, alternative agriculture using alternative crops and environmentally friendly production practices will enhance productivity without polluting the environment. Variety trials, fertilizer treatments and different cultural practices have been investigated to determine the relationship between plants and growth factors, appropriate crop management practices and pest control.

### **Cooperative Agricultural Research Center**

Understanding and adoption of new genetics and sustainable agronomic technologies by limited resource farmers will improve productivity and profitability of field crop and forage production systems. The plant systems research scientists will collaborate with Cooperative Extension staff/faculty to provide outreach educational programs on vegetable crop, medicinal plant, and leguminous crop production so as to improve the economic success of limited resource growers in Texas. Scientific research will focus on fertilizer treatments and different sustainable cultural practices that increase crop yield. It is expected that these impacts together with those for emerging added values of agricultural products will continue to influence the direction of basic and applied research on crop plants.

## **2. Scope of the Program**

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

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

### **1. Assumptions made for the Program**

#### **AgriLife Extension and AgriLife Research**

Food, fiber, and forage production will remain key economic industries in the State of Texas. These industries contribute in excess of 10 billion dollars annually to the Texas economy, as well as supporting the state's livestock industry (see program on livestock). Producers have and will continue to need access to emerging technologies to remain profitable and sustainable.

National demand for alternative energy resources places Texas agricultural producers in a position to supply alternative fuel resources needed for the state. This industry will require intensive research and education programs to switch from conventional production systems to systems which are fuel efficient

and have net energy gains.

**Cooperative Extension Program**

This program assumes that with contributions from the Cooperative Extension staff, better production practices will be identified and used for the profitable production of fruits, vegetables, berries and other alternative crops. To ensure full participation of the stakeholders, applied research will be conducted with socially disadvantaged farmers. This applied research will allow the farmers to work closely with Cooperative Extension staff while gaining hands-on experience in sustainable agriculture. This training will be in addition to the workshops, seminars and other educational programs provided to the farmers. The planning and execution of the plans will continue to be in collaboration with clientele.

**Cooperative Agricultural Research Center**

Limited resource farmers are keen to adopt improved genetic varieties of vegetable and forage crops that require sustainable production inputs and lead to higher profits. Plant system research scientist will work closely with Cooperative Extension Staff to select the vegetable, fruit, medicinal, and leguminous crop species suitable for production by limited resource farmers. Furthermore, crop producers will continue to need research-based hands-on training on sustainable agriculture.

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

**AgriLife Extension and AgriLife Research**

The goal of the Crop and Forage Production Program is to meet the needs of Texas producers by providing the research and educational programs required to provide abundant and high quality food, feed and fiber while remaining profitable and sustainable.

**Cooperative Extension Program and Cooperative Agricultural Research Center**

The ultimate goal of this program is to train agricultural producers in the use of alternative enterprises and production systems that will help them maximize the quality and quantity of goods produced. The impact of different cropping/production systems and cultural practices will be used to increase farm profitability.

**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
2017	50.0	5.0	85.0	6.0
2018	50.0	5.0	85.0	6.0
2019	50.0	5.0	85.0	6.0
2020	50.0	5.0	85.0	6.0
2021	50.0	5.0	85.0	6.0

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

**1. Activity for the Program**

**AgriLife Extension and AgriLife Research**

Provide training and program materials to County Extension Agents to conduct educational programs at the county level. Technical assistance is provided to agents by specialists in the area of result demonstrations and applied research. Provide multi-county, regional and statewide educational programs via specialist faculty to various stakeholders. Coordinate and collaborate with state and federal agencies in crop and forage activities.

**Cooperative Extension Program and Cooperative Agricultural Research Center**

Cooperative Extension Program and Cooperative Agricultural Research Center will collaborate to conduct educational programs for County Agents; and subject matter workshops/field days/ tours for crop producers. Cooperative Extension will provide one-on-one technical assistance/consultations, and training programs that will assist clients to develop their farm plans.

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

**Extension**

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> <li>● Other 1 (Field Days)</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites other than eXtension</li> </ul>

**3. Description of targeted audience**

**AgriLife Extension and AgriLife Research**

The target audience for this program consists of agricultural producers who produce food, fiber, and forages in the state. Specific focus is on those commodities listed in the program overview. In addition, these programs are interpreted to the urban public through various methods.

**Cooperative Extension Program and Cooperative Agricultural Research Center**

Our programs will assist a diverse audience, with emphasis on the underserved, hard to reach, and have limited social and economic resources to improve their quality of life; this will include farmers and ranchers, private land and forest owners, military veterans and their families.

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

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

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

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

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

### **1. Output Measure**

- # of group educational sessions conducted.
- # of research-related projects.
- # of one-on-one technical assistance/consultations.

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

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

O. No	Outcome Name
1	% of crop and forage producers that adopt or plan to adopt best management practices to improved quality and profitability.
2	% of crop and forage producers that report increased knowledge of best management practices to improve quality and profitability.
3	# of farmers who gained knowledge on specialty/alternative cash crops investigated by research.
4	# of farmers who adopted or planning to adopt specialty/alternative cash crops investigated by research.

### **Outcome # 1**

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

% of crop and forage producers that adopt or plan to adopt best management practices to improved quality and profitability.

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

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

- 102 - Soil, Plant, Water, Nutrient Relationships
- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Diseases and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 216 - Integrated Pest Management Systems

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

- 1862 Extension
- 1890 Extension
- 1890 Research

### **Outcome # 2**

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

% of crop and forage producers that report increased knowledge of best management practices to improve quality and profitability.

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

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

- 102 - Soil, Plant, Water, Nutrient Relationships
- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Diseases and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 216 - Integrated Pest Management Systems



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

- 1862 Extension
- 1890 Extension
- 1890 Research

**Outcome # 3**

**1. Outcome Target**

# of farmers who gained knowledge on specialty/alternative cash crops investigated by research.

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

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

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

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

- 1890 Extension
- 1890 Research

**Outcome # 4**

**1. Outcome Target**

# of farmers who adopted or planning to adopt specialty/alternative cash crops investigated by research.

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

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

- 102 - Soil, Plant, Water, Nutrient Relationships
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 206 - Basic Plant Biology

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

- 1890 Extension
- 1890 Research

### **V(J). Planned Program (External Factors)**

#### **1. External Factors which may affect Outcomes**

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

#### **Description**

Crop and forage production in Texas has been influenced by natural disasters such as hurricanes, floods, drought and wildfires. Production costs and incentives for production, management and use are influenced by economic changes. Higher fuel prices, fertilizer prices, equipment costs, and fees associated with technology in genetically modified crops are all factors. Public policy changes and government regulations challenge educators to provide up-to-date, neutral information that helps producers make economically viable decisions. Texas is facing a critical situation in meeting anticipated water demand as a result of population growth and unanticipated water demand due to drought and high temperatures. Population shifts and use of available land for productive and meaningful crop and forage production bring opportunities and challenges to producers/users and the associations/corporations/groups that make up this diverse industry.

### **V(K). Planned Program - Planned Evaluation Studies**

#### **Description of Planned Evaluation Studies**

The common strategies employed for evaluation studies involve the use of both pre/post and retrospective studies. Use of these strategies will be contingent upon the type of data to be collected and the target audience.

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

### **Program # 4**

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

Water & Natural Resources Management

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

##### **AgriLife Extension and AgriLife Research**

To help Texas manage its water resources to the greatest possible extent, scientists and specialists with AgriLife Research and AgriLife Extension are working with the Texas Water Resources Institute and other partners to develop and implement comprehensive research, outreach, and extension programs. Common goals of these programs include the following:

Ensure that water supplies are used efficiently in agricultural production, landscape maintenance, in the home, and in other settings.

Promote appropriate application of water-efficient irrigation technologies and best management practices; cropping systems and related management strategies; and water-efficient landscapes to support conservation and to mitigate effects of declining water supplies.

Protect water quality by preventing contamination in a number of settings, including agricultural practices, the operations and maintenance of on-site wastewater treatment systems, landscape and turfgrass maintenance, and the use and disposal of household chemicals.

Identify opportunities to develop alternative, untapped, sources of water, including extensive efforts in water conservation, rainwater harvesting, water reclamation, wastewater reuse, the efficient removal of contaminants from saline, brackish and mineralized waters, and recovery of brines resulting from oil and gas operations.

Bring timely information about critical issues to water resources managers, policy makers, and the public, including such topics as water resources, water marketing, groundwater management, storm water management, and new governmental regulations and programs that affect water resources management.

Promote widespread education programs directed at school children and adults, including efforts touching on such issues as water resources management, drinking water quality, and environmentally-friendly methods to maintain landscapes, and ways to achieve water conservation in the home and on the farm.

The Water Management program supports the AgriLife Research Strategic Plan imperatives to sustain healthy ecosystems and conserve our natural resources; enhance competitiveness, prosperity, and sustainability of urban and rural agricultural industries; and mitigate negative effects of global climate change. This program supports AgriLife Extension Roadmap goals to enhance natural resource conservation and management and ensure a sustainable, profitable, and competitive food and fiber system for Texas.

##### **Cooperative Agricultural Research & Extension Program**

The mission of natural resources and environmental sciences research and extension is to serve specific needs of the clientele in local areas and the broader needs of the state of Texas in general through basic and applied research and extension directed to the problems and their impacts on Texas' natural resources and environment.

This mission has the following goals:

- Conduct research using interdisciplinary and multidisciplinary approaches that require input and contribution from various disciplines of Natural Resources and Environmental Systems (NRES).
- Conduct research through participation and partnership which will involve local stakeholders, different state and federal agencies, and universities, in addition to community based organizations Partnering with Cooperative Extension Program to conduct on-campus demonstrations related to cover crops, soil and plant health, water and environmental quality, nutrient management, micro-irrigation and agricultural water resources management.

The major research objectives are to:

- evaluate current agricultural and watershed management practices, develop, and demonstrate best management practices aimed at optimizing the use of Texas' natural resources and protecting its environment. This includes demonstrating the effect of soil erosion control practices, e.g., cover crops, in reducing sediment and pollutant loads (pesticides and nutrients) into surface waters, ground water resources, and adjacent water bodies. This applied work provides a useful link between advanced technology development for environmental management, and its adoption and implementation by farmers and ranchers.
- evaluate the performance of a suite of decision management tools by using various models that can be used to establish best management practices at the plot and watershed scales.
- study the impact of climate change and variability and/or land-use change on hydrologic cycle/ water resources management and carbon-nitrogen cycle using various hydrologic model at range of scales.
- develop irrigation water management practices and tools/software for different crops
- develop a GIS-based irrigation water management software to estimate crop irrigation water requirements for consumptive use in Texas
- develop methods to study water resources management using remotely sensed products at range of scales
- conduct soil, water, and pasture research projects that produce qualitative and quantitative results that allow farmers and ranchers to incorporate practices that allow their enterprise to fit within the ecological setting in a manner that leads to sustainable and cost efficient operation
- conduct soil physical and soil chemical study on the PVAMU Farm with an aim of extrapolating the data to the surrounding area and region as part of a soil pH initiative to start the dialogue about soil fertility and its importance to plant health, soil health, and a healthy environment
- study of soil conditions as impacted by beneficial and invasive plant species biodiversity under designed pasture management regimes within an ecological based farming system in East Central Texas
- study the impact of the small farming facilities on the environment
- develop testbed at PVAMU farm and install EC flux tower, series of weather stations and study spatial and temporal variability in evapotranspiration, CO<sub>2</sub>, weather/climate etc
- investigate the use of urban planning tools (spatial decision support systems etc.) to assist in policy formulation on climate and other areas critical to NRES.
- study the impact of natural and manmade disasters on natural resources.

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

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

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

**6. Expending other than formula funds or state-matching funds :** No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	0%	45%	0%	25%
111	Conservation and Efficient Use of Water	50%	20%	50%	25%
112	Watershed Protection and Management	50%	5%	50%	25%
125	Agroforestry	0%	25%	0%	0%
132	Weather and Climate	0%	5%	0%	25%
	<b>Total</b>	100%	100%	100%	100%

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

1. Situation and priorities

**AgriLife Extension and AgriLife Research**

Water resources utilized to meet our water demand are mainly stored in surface reservoirs and aquifers. Texans currently utilize 17.4 million acre feet per year (AFY) from a total supply of 29.8 million AFY. Population growth, water infrastructure and aquifer mining will limit the ability to meet future water demands. Water conservation, water reclamation, rainwater harvesting, and saline, brackish, mineralized and impaired water source development is needed to meet our long-term water supply. Water quality best management practices are needed to reduce contaminant loading to our water resources to maintain the high quality of our fresh water supplies. Balancing the water demands for meeting human needs coupled with economic development must be balanced with the environmental flows required for healthy ecosystems. Strong research and Extension programs are needed to develop and disseminate information regarding best management practices capable of protecting and utilizing available water resources to meet long-term needs.

**Cooperative Agricultural Research & Extension Program**

The primary research work in this area is to investigate the principles, processes, and applications associated with the efficient, environmentally sound, and watershed-based allocation and use of natural resources such as soil and water in Texas that would be used to promote best agricultural and watershed management practices. Soil, plant and Water are the fundamental agents that link all components (living and non-living) in agricultural production, natural resources, and environmental management. There is a substantial need for research on climate change and variability, soil, crop/plant and water sciences, water resources, and watershed management. This research involves studying and finding the solutions to different contemporary water resource problems using a combination of experimental, theoretical, and numerical modeling across a wide range of temporal and spatial scales with conflicting land usages (urban, agriculture, and forestry). In addition, environmental concerns over high nutrient weights from agriculture can be grouped into three categories: issues related to nutrient accumulation in soil, relating to run-off and leaching into water sources, and the effect of manure nutrient volatilization on air quality.

2. Scope of the Program

- In-State Extension

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

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

### **1. Assumptions made for the Program**

#### **AgriLife Extension and AgriLife Research**

The water management program assumptions include: (1) continued funding for maintaining a critical mass of water faculty; (2) development of targeted initiatives evaluating best management practices to limit contaminate loading from agricultural production systems, residuals processing operations, landscape systems, wastewater infrastructure, storm water, and urbanized areas; (3) development of targeted initiatives evaluating methods to efficiently utilize water resources, capture alternative supplies, and remove contaminants from sewage, storm, saline, brackish, mineralized and brine water sources; (4) implementation of targeted educational programs increasing knowledge regarding efficient use of water resources, rainwater harvesting, water reclamation, wastewater reuse, and contaminant removal; and (5) implementation of targeted educational programs to increase knowledge regarding the utilization of best management practices to limit contaminant loading to our water resources and enhancing watershed stewardship.

#### **Cooperative Agricultural Research Center**

Optimum utilization of natural and renewable resources for assuring productive, stable, and environmentally sound agro-ecosystems requires a strong water resource management program; such a program assumes the following: i) funding supports for research projects that address the principles, processes, and applications associated with the efficient, environmentally sound and watershed-based allocation and use of water resources in Texas; ii) determine the effects of alternative land uses and/or disturbances on hydrologic and ecologic cycles, especially on evapotranspiration soil moisture, carbon, nitrogen, surface runoff and sediment production; iii) hydrologic attributes of Texan watersheds; iv) spatial and temporal scale issues associated with surface water and daily contaminant loads; v) water quantity, quality and management, especially in drought-prone areas around the state; vi) development of theoretical and experimental tools for forecasting surface and groundwater contamination; vii) assessing the environmental fate and impacts of water contaminants; interrelationships with soil quality; and mitigation and remediation alternatives for protecting the quality of surface and groundwater resources; viii) development of new methods and approaches that uses advanced GIS and Remote Sensing technologies in agricultural and watershed management. The continuation of this water resources management program is critical to achieve these previously sited research goals state wide.

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

#### **AgriLife Extension and AgriLife Research**

Landowners, agricultural producers, homeowners, communities and water resource managers will understand and adopt best management practices to protect water quality, enhance water conservation, and support appropriate utilization of alternative supplies in order that water supplies will meet future water needs, essential for expanding agricultural growth, jobs, and the economy in both rural and urban areas.

#### **Cooperative Agricultural Research Center**

The ultimate Goal of this research program is to promote sound soil, crop and water management practices using advanced technology and modeling and provide a solid foundation on which to build sustainable water resources management and best crop management practices in Texas with conflicting land usages (urban, agriculture, and conservation) and evaluate the environmental impact of small farming enterprises for different stakeholders including private citizen, homeowners, growers, crop production manager, and staff of local, state and federal agencies.

**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
2017	20.0	3.0	10.0	8.0
2018	20.0	5.0	10.0	8.0
2019	20.0	5.0	10.0	8.0
2020	20.0	6.0	10.0	9.0
2021	20.0	6.0	10.0	9.0

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

**1. Activity for the Program**

**AgriLife Extension and AgriLife Research**

Publish research findings generated through evaluation of best management practices to efficiently manage available water resources, to limit off-site contaminant transport from production, processing, and landscaping systems, to utilize alternative water sources and to remove contaminants from impaired/alternative water sources.

Develop and conduct research and educational programs utilizing direct and indirect educational methods to support efficient utilization and conservation of water resources, to develop alternative water supplies, to implement best management practices on agricultural production and landscapes to protect water resources from contaminants, to promote proper management of surface and ground water resources, to enhance rainwater harvesting and to remove contaminants from impaired water supplies.

The work of AgriLife Research and AgriLife Extension is conducted jointly where research-based information is generated and then transferred to clientele.

Continue development of educational resources such as articles, fact sheets, bulletins, curriculum materials, short course manuals and other teaching materials.

**Cooperative Agricultural Research and Extension Program**

Publish research findings generated through evaluation of best management practices to efficiently manage available water resources, to limit off-site contaminant transport from production, processing, and landscaping systems, to utilize alternative water sources and to remove contaminants from impaired/alternative water sources.

Develop and conduct research and educational programs utilizing direct and indirect educational methods to support efficient utilization and conservation of water resources, to develop alternative water supplies, to implement best management practices on agricultural production and landscapes to protect water resources from contaminants, to promote proper management of surface and ground water resources, to enhance rainwater harvesting and to remove contaminants from impaired water supplies.

The work of AgriLife Research and AgriLife Extension is conducted jointly where research-based information is generated and then transferred to clientele.

Continue development of educational resources such as articles, fact sheets, bulletins, curriculum materials, short course manuals and other teaching materials.

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

<b>Extension</b>	
<b>Direct Methods</b>	<b>Indirect Methods</b>
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites other than eXtension</li> </ul>

**3. Description of targeted audience**

**AgriLife Extension and AgriLife Research**

Programs focusing on the issue of water address target audiences including but not limited to agricultural producers, homeowners, landscape managers, industry practitioners, water resource managers, technical service provider, and others who identify themselves with this issue.

**Cooperative Agricultural Research and Extension Program**

Programs focusing on the issue of water address target audiences including but not limited to producers, homeowners, landscape managers, industry practitioners, water resource managers, and others who identify themselves with this issue.



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

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

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

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

## V(H). State Defined Outputs

### 1. Output Measure

- # of group educational sessions conducted.
- # research-related projects.

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

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

O. No	Outcome Name
1	% of participants who report an increased knowledge of best management practices related to water management.
2	% of participants who report the plan to or have adopted best management practices related to water management.
3	% of participants who report an increased knowledge of best management practices related to cover crops, nutrient management, micro irrigation and water capture.
4	% of participants who adopted best management practices related to cover crops, nutrient management, micro irrigation and water capture.
5	% of participants who report an increased knowledge of best management practices related to soil and water management.
6	% of participants who report the plan to or have adopted best management practices related to soil and water management.

**Outcome # 1**

**1. Outcome Target**

% of participants who report an increased knowledge of best management practices related to water management.

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

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

- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management

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

- 1862 Extension
- 1862 Research

**Outcome # 2**

**1. Outcome Target**

% of participants who report the plan to or have adopted best management practices related to water management.

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

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

- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management

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

- 1862 Extension
- 1862 Research

**Outcome # 3**

**1. Outcome Target**

% of participants who report an increased knowledge of best management practices related to cover crops, nutrient management, micro irrigation and water capture.

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

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

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 125 - Agroforestry
- 132 - Weather and Climate

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

- 1890 Extension
- 1890 Research

### **Outcome # 4**

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

% of participants who adopted best management practices related to cover crops, nutrient management, micro irrigation and water capture.

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

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

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 125 - Agroforestry

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

- 1890 Extension
- 1890 Research

### **Outcome # 5**

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

% of participants who report an increased knowledge of best management practices related to soil and water management.

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

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

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management

- 132 - Weather and Climate

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

- 1890 Extension
- 1890 Research

### **Outcome # 6**

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

% of participants who report the plan to or have adopted best management practices related to soil and water management.

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

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

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 132 - Weather and Climate

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

- 1890 Extension
- 1890 Research

### **V(J). Planned Program (External Factors)**

#### **1. External Factors which may affect Outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Other (Other Program Areas)

#### **Description**

The factors listed above could have either positive or negative effects on the Water Management Program. The issue of water is of such an inter-disciplinary nature that effects of external factors related to other program areas could also have an impact on water.

### **V(K). Planned Program - Planned Evaluation Studies**

**Description of Planned Evaluation Studies**

Participants in selected programming activities will be administered a Retrospective-Post Test immediately after an educational activity. The issue-based questions will record the knowledge/awareness of the participants before and after the activity and measure intentions to adopt best management practices. Case studies will be implemented to evaluate the effectiveness of specific educational programs at reaching their target audience.

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

### **Program # 5**

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

Range Management

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

##### **AgriLife Extension and AgriLife Research**

Land stewardship, leading to rangeland sustainability, requires wise and proper management of the total rangeland ecosystem. This planned program will focus on achieving understanding of rangeland ecosystems by managers and the general public. It will give clientele the basis for making better land-management and firm level decisions, the ability to manage risk, and the knowledge necessary to meet natural resource management goals and objectives. It will address the issues of rangeland health and restoration; the production of abundant, quality water from rangeland watersheds; the management of weeds and brush on rangeland; and increase awareness of the spread of exotic, invasive plants in Texas. Evaluation of the program will be through the use of Retrospective-Post instruments evaluating knowledge gained, attitudes changed, skills learned, and/or adoption. The ability to make informed decisions will be measured.

The Range Management program supports three imperatives within the AgriLife Research Strategic Plan: sustain healthy ecosystems and conserve our natural resources; enhance competitiveness, prosperity, and sustainability of urban and rural agricultural industries; and mitigate negative effects of global climate change; and the AgriLife Extension Roadmap of enhancing natural resource conservation and management.

**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 :** No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
112	Watershed Protection and Management	40%	0%	40%	0%
121	Management of Range Resources	60%	0%	60%	0%
	<b>Total</b>	100%	0%	100%	0%

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

1. Situation and priorities

**AgriLife Extension and AgriLife Research**

Although Texas is the second most populated state, most of its land area is in rural settings. Seventy percent of the total acreage (over 80 million acres) is classified as rangelands and permanent pastures. These lands provide forage for livestock, habitat for wildlife, water resources, improved air quality, open space for recreation, and other important resources and products. Rangeland sustainability must be maintained or enhanced by the use of management systems and practices that are economically viable, environmentally sound, and socially acceptable. The breaking up of large ranches has resulted in numerous smaller ones. This fragmentation often disrupts the ecological integrity of the landscape making management more difficult. Changing demographics and land ownership patterns have also affected management of these lands. Additionally, increasing importance of rangeland resources, such as water, has added value to improved management of watersheds. The risk of climatic events such as drought, storms, etc. are superimposed upon the management of these lands. Drought is a frequent, although erratic, often severe phenomena that has caused economic downturns, added to the risk of wildfire, and has caused degradation of Texas rangelands. The latter has resulted in rangeland restoration to be an important near term goal. The economic sustainability for landowners of rangeland depends upon the ability to manage that resource in a way to produce livestock, wildlife, and/or nature-based tourism enterprises. Four priority areas have been identified for programming. These are rangeland health and restoration, proper management of rangeland watersheds, management of native weeds and brush species, and the management of non-native (exotic) plant species on Texas rangelands.

2. Scope of the Program

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

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

1. Assumptions made for the Program

**AgriLife Extension and AgriLife Research**

Assumptions include: (1) continued funding and critical mass of the range management research and Extension faculty and staff; (2) a targeting of audiences into age (youth and adults) and type ("new" and traditional); and annual/seasonal shifting of focus depending upon environmental and economic



conditions. Flexibility is the key to successful programming.

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

**AgriLife Extension and AgriLife Research**

Goal 1. Rangeland owners/operators, ranch managers, and other interested groups ensure the proper management of rangelands and associated natural resources through stewardship education in order to support the economic sustainability of the rangeland resources for livestock, wildlife, and nature-based tourism enterprises.

Goal 2. Rangeland owners/operators will make informed decisions, based on sound, research-based information, concerning natural resources that are consistent with both individual and family goals and the potential for the resource base to support those goals.

**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
2017	17.0	0.0	15.0	0.0
2018	17.0	0.0	15.0	0.0
2019	17.0	0.0	15.0	0.0
2020	17.0	0.0	15.0	0.0
2021	17.0	0.0	15.0	0.0

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

**1. Activity for the Program**

**AgriLife Extension and AgriLife Research**

Primary activities in this program will focus on development and conducting of research and educational programs to support proper management and restoration of native rangelands for clientele. Applied research and result demonstrations to support improved rangeland management will also be conducted. Training and support for County Extension Agent and Specialist training will be provided on appropriate and timely aspects of rangeland management. Emphasis will be placed on continued development of appropriate publications, websites, online courses, and other teaching materials.

Work of AgriLife Research and AgriLife Extension is conducted jointly where research-based information is generated and transferred to clientele.

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

**Extension**

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> <li>● Other 1 (Training Meetings)</li> <li>● Other 2 (Tours and Field Days)</li> </ul>	<ul style="list-style-type: none"> <li>● Web sites other than eXtension</li> <li>● Other 1 (Publications)</li> </ul>

**3. Description of targeted audience**

**AgriLife Extension and AgriLife Research**

The target audiences for this program include federal and state agencies, youth and adults. The adult audiences specifically include traditional landowners, operators, absentee landowners, and "new", novice landowners that either just bought land or have made a career off the land and has returned to it.

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

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

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

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

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

### **1. Output Measure**

- # of group educational sessions conducted.
  - # of research-related projects.
  - # of result demonstrations conducted.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

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

O. No	Outcome Name
1	% of Land Managers who report increased knowledge leading to better decision-making for wise pesticide use.
2	% of livestock producers who report increased knowledge of rangeland monitoring, watershed management, weed and brush control.

**Outcome # 1**

**1. Outcome Target**

% of Land Managers who report increased knowledge leading to better decision-making for wise pesticide use.

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

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

- 112 - Watershed Protection and Management
- 121 - Management of Range Resources

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

- 1862 Extension
- 1862 Research

**Outcome # 2**

**1. Outcome Target**

% of livestock producers who report increased knowledge of rangeland monitoring, watershed management, weed and brush control.

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

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

- 112 - Watershed Protection and Management
- 121 - Management of Range Resources

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

- 1862 Extension
- 1862 Research

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes

**Description**

Range Management programs are potentially affected by external factors such as those listed above. Factors such as the economy and/or appropriation changes could have a positive or negative effect on efforts to provide research and education in this area.

## **V(K). Planned Program - Planned Evaluation Studies**

### **Description of Planned Evaluation Studies**

All participants in programming activities will be administered a Retrospective-Post Test immediately after each activity in each of the four issue areas. These issue-based questions will record the knowledge/awareness of the participant before the activity and immediately after the activity. In some cases, selected participants will be sent a separate survey at the end of the year to gain information from across the State. All information will be placed on the web for collections and analysis.

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

### **Program # 6**

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

Climate Change

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

##### **AgriLife Extension**

Develop and conduct educational programs utilizing direct and indirect educational methods to support knowledge gain and adoption of practices to abate impact of climate change. Information will be shared on weather patterns, ET estimates to support irrigation scheduling and management of crops, livestock, landscapes, wildlife and natural resources in an increasingly variable climate in Texas counties. Best management practices will be discussed with a potential to reduce factors contributing to climate change.

##### **AgriLife Research**

The primary research effort is to develop crops, forages and management systems that are climate resilient, allowing producers to take advantage of favorable weather patterns while minimizing risk associated with drought, high temperatures and other variable climate effects.

The second area of response to this pressing issue is to generate reliable, verifiable data regarding carbon sequestration, carbon cycling, and interrelationships of cropping systems, livestock production and climate change. An example of this effort is using carbon dioxide from coal fired power generation as a feedstock for algae production. Research is also ongoing to develop and add value to co-products from algae production. Additional research focuses on development of models for predicting our total water resources. Current weather conditions influence our soil water, surface water and groundwater resources. As climate changes result in variable weather conditions better decision support systems are needed to predict our available water resources. Remotely sensed real-time data are needed as inputs to these models for prediction soil water, surface water and groundwater availability. This research supports the strategic plan imperative to mitigate negative effects of global climate change.

**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 :** No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	0%	0%	20%	0%
112	Watershed Protection and Management	0%	0%	20%	0%
132	Weather and Climate	100%	0%	0%	0%
133	Pollution Prevention and Mitigation	0%	0%	20%	0%
201	Plant Genome, Genetics, and Genetic Mechanisms	0%	0%	20%	0%
206	Basic Plant Biology	0%	0%	20%	0%
	<b>Total</b>	100%	0%	100%	0%

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

1. Situation and priorities

**AgriLife Extension**

Clientele are faced with decisions on how to best respond to climatic patterns that pose unacceptable levels of risk to their operations. Agricultural operations must utilize available water resources to meet their needs and plan for mitigation strategies when faced with limited water supplies. Efficient use of water resources is one component of responding to varying weather conditions.

Production systems in the state are geared to regional "characteristic" climate conditions - "normal" weather conditions and a range either side of normal. When the climate throws producers an outlier and rainfall is absent due to variability abnormal climatic patterns, the resulting drought conditions can be devastating to agricultural operations. Awareness of drought conditions in Texas counties supports decision makers in responding to local needs. The extension disaster education network (EDEN) facilitates collection of information and sharing of information about practices to mitigate the effects of drought.

**AgriLife Research**

Climate change is a critical issue requiring development of crops, germplasm and management practices to abate the factors leading to climate change and predictive tools for estimating the status of our water resources. Practices which sequester significant quantities of carbon will potentially mitigate climate changes while offering additional economic opportunities for agricultural producers. Development of simulation models capable of predicting the status of our soil water, surface water and groundwater resources will assist decision makers in responding to changing weather conditions.

2. Scope of the Program

- In-State Extension
- In-State Research



- Integrated Research and Extension
- Multistate Integrated Research and Extension

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

**1. Assumptions made for the Program**

The research and extension program assumptions include: (1) continued funding for maintaining a critical mass of faculty; (2) development of targeted initiatives evaluating best management practices to mitigate the impact of variable weather conditions and climate change; (3) development of targeted initiatives evaluating methods to efficiently utilize water resources, define interrelationships with cropping systems, and mitigate impacts on livestock production; (4) implementation of targeted educational programs increasing knowledge regarding efficient use of water resources, and migration practices to limit the impact of weather and climate change.; (5) plant systems research is valued highly by our stakeholders; (6) environmental systems components are beneficial to communities; and (7) applied and supporting basic research serve to bolster our fundamental knowledge within the food and agricultural sciences

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

**AgriLife Extension**

To facilitate the ability of agricultural producers and community leaders to make informed decisions when responding to climate change.

**AgriLife Research**

To develop management practices and predictive tools that allow people to respond to changing climatic conditions.

**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
2017	5.0	0.0	1.5	0.0
2018	5.0	0.0	1.5	0.0
2019	5.0	0.0	1.5	0.0
2020	5.0	0.0	1.5	0.0
2021	5.0	0.0	1.5	0.0

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

**1. Activity for the Program**

**AgriLife Extension**

Develop and conduct educational programs utilizing direct and indirect educational methods to increase knowledge of and support adoption of management practices to mitigate effects of weather and climate change.

**AgriLife Research**

The research response to this pressing issue is to generate reliable, verifiable data regarding carbon sequestration, carbon cycling, and interrelationships of cropping systems, livestock production and climate change. An example of this effort is using carbon dioxide from coal fired power generation as a feedstock for algae production. Research is also ongoing to develop and add value to co-products from algae production. AgriLife Research will leverage and share research findings by joining other states in climate monitoring networks such as AmeriFlux and/or Drought-Net.

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

<b>Extension</b>	
<b>Direct Methods</b>	<b>Indirect Methods</b>
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● One-on-One Intervention</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites other than eXtension</li> </ul>

**3. Description of targeted audience**

Research products and educational programs focusing on the issue of weather and climate change address target audiences including but not limited to producers, corporate businesses, landscape managers, water resource managers, decision makers, and others who identify themselves with this issue.

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

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

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

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

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

### **1. Output Measure**

- # of educational programs conducted.
- # of research related projects.
- # of graduate/undergraduate students involved in research projects.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

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

O. No	Outcome Name
1	# of people reporting knowledge gained through participation in educational activities.
2	# of people reporting a willingness to adopt practices through participation in educational programs.

**Outcome # 1**

**1. Outcome Target**

# of people reporting knowledge gained through participation in educational activities.

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

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

- 132 - Weather and Climate

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

- 1862 Extension
- 1862 Research

**Outcome # 2**

**1. Outcome Target**

# of people reporting a willingness to adopt practices through participation in educational programs.

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

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

- 132 - Weather and Climate

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

- 1862 Extension
- 1862 Research

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Other (changing programming areas)

**Description**

The factors listed above could have either positive or negative effects on the educational programs and research activities. The issue of climate change requires an inter-disciplinary response to development of practices and sharing of information. External factors affecting individual disciplinary fields can impact the ability to develop and deliver information on weather and climate change.

Our regional climatic dynamics can have an extremely adverse effect on our applied systems research. Economic, appropriations, and policy changes will determine our ability to address focus areas. Government regulations will direct our focus as landowners and end-users seek our knowledge to address plant and environmental systems needs.

## **V(K). Planned Program - Planned Evaluation Studies**

### **Description of Planned Evaluation Studies**

Participants in selected programming activities will be administered a Retrospective-Post Test immediately after an educational activity. The issue-based questions will record the knowledge/awareness of the participants before and after the activity. Case studies will be implemented to evaluate the effectiveness of specific educational programs at reaching their target audience.

Methods to address data collection will include sampling of research outcomes based on observation and portfolio reviews. Care will be given to maintain confidentiality within the project framework while allowing outcomes to be clearly recorded based upon level of importance to stakeholders.

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

### **Program # 7**

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

Sustainable Energy

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

##### **AgriLife Extension and AgriLife Research**

The US currently uses more than five times as much petroleum as any other nation. This energy is the driving force of our economy. Reducing the demand for imported petroleum through development and use of biofuels from agricultural lands is a daunting challenge AgriLife Research and Extension will collaborate with a broad scope of partners, employing basic science, field research, demonstration and Extension education to identify, develop and deploy viable second generation biofuels. Our plan of work will include investigation of microalgae, oilseeds, lignocellulosic feed stocks and organic residuals including suitability for production, economic feasibility, logistics solutions, conversion to biofuels, and identification of suitable organic residuals. Investigations will include genomics, marker assisted selection, traditional plant breeding, wide hybridization, studies of the logistics of candidate biofuel feed stocks, identification and development of BMPs for high yielding, stress tolerant feed stocks, thermal gasification of feed stocks, separation of feedstock produced in an aqueous solution, harvesting of organic residuals and processing technologies and evaluating BTU production per unit of feedstock.

Extension programming is developing to demonstrate candidate feed stocks, gasification techniques and selection/harvesting/transportation methods and identify their best fit in the emerging bioenergy market.

Research is focused on breeding of superior feedstock for bioenergy systems and innovative conversion technologies with the ultimate goal of making bioenergy economically viable without the need for subsidies.

**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 :** No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%	0%	10%	0%
111	Conservation and Efficient Use of Water	10%	0%	10%	0%
201	Plant Genome, Genetics, and Genetic Mechanisms	0%	0%	50%	0%
205	Plant Management Systems	50%	0%	10%	0%
402	Engineering Systems and Equipment	30%	0%	20%	0%
	<b>Total</b>	100%	0%	100%	0%

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

1. Situation and priorities

Texas is ideally suited to contribute to the national goal of the development of sustainable energy due to its large agricultural industry, millions of acres of marginal land previously planted to field crops which can be dedicated to bioenergy production and a large petroleum and natural gas industry which includes both production and refining. Developing bioenergy will require a connection between agriculture and the petroleum industry, and the refineries may play a key role in second generation biofuels. AgriLife Research and Extension have their traditional roots in production agriculture, but have also developed close linkages with the energy industry. The strong team of research and Extension faculty dedicated to finding solutions to this demand for renewable energy and the partnerships formed with state and federal agencies, the agricultural industry and the energy sector will facilitate advancements in bioenergy.

Our priorities are to develop a thriving industry producing an abundant and sustainable supply of bioenergy from second generation biofuel feed stocks and algae while minimizing impact on the supply of food, feed and fiber and protecting the state's natural resources.

2. Scope of the Program

- In-State Extension
- In-State Research

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

1. Assumptions made for the Program

Assumptions for the bioenergy research and Extension program are that Texas has an abundant land resource as well as the agricultural and energy infrastructure to have a significant impact on the state and national need for renewable energy resources from plant material, algae, and organic residuals. We have significant assets in faculty and infrastructure to carry out the basic and applied research as well as Extension programming to provide a catalyst for the development of a second generation biofuel industry. We assume that bioenergy crops will provide an attractive alternative to production systems currently in place. We assume that BMPs can and will be developed to protect land and water resources. We have found significant partnerships in the public and private sector to accomplish these goals.



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

The ultimate goals of the bioenergy research and extension programs are to provide sustainable, abundant, clean and renewable energy resources that complement our current agricultural, petroleum and electrical energy generating industries.

**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
2017	1.0	0.0	1.0	0.0
2018	1.0	0.0	1.0	0.0
2019	1.0	0.0	1.0	0.0
2020	1.0	0.0	1.0	0.0
2021	1.0	0.0	1.0	0.0

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

**1. Activity for the Program**

**AgriLife Extension**

Agricultural producers and the energy industry have a keen interest in the role that agriculture will play in contributing to renewable energy for America, and are looking to AgriLife Extension to help define which second generation crops will fit this market and how they will be produced. Texas is a major livestock feeding state and faces a feed grain deficit at current production levels, making second generation crops the only practical feed stocks for bioenergy. AgriLife Extension has responded through applied research and demonstrations of candidate oilseed and lignocellulosic feedstock crops; holding workshops and field days for agricultural producers; and by meeting with commercial interests from the energy sector to interpret potential for a variety of plant based bioenergy options. As crop-based bioenergy other than the traditional ethanol from feed grains is still in its infancy, actual adoption of second generation bioenergy is limited. Research involved the development of cropping system BMPs, testing and development of novel dedicated oilseeds and lignocellulosic bioenergy crops, advanced plant breeding systems, micro- and macro-algae, logistics and conversion technologies. Our focus is on second generation oilseeds and lignocellulosic feed stocks rather than on corn, soybeans, and other crops that can be used for food and feed. Drought and salinity tolerance, adaptation to marginal growing conditions and wide hybridization are emphasized in research in order to increase adaptation and sustainability of alternative energy systems. Organic residuals at livestock production systems offer a concentrated source of feedstock for the bioenergy production. Demonstration of identification, selection, harvesting and transportation of quality organic residuals for entering bioenergy production is critical to ensuring a sufficient energy resource.

**AgriLife Research**

Research involves cropping systems, novel dedicated energy crops, advanced plant breeding systems, micro- and macro-algae, novel oilseeds, logistics and conversion technologies. Our focus is on lignocellulosic and unique plant oil feedstocks for liquid motor fuels rather than on corn, soybeans, and other crops that can be used for food and feed. Drought tolerance and wide hybridization are emphasized

in breeding research in order to increase adaptation and sustainability of alternative energy systems. Best management practices are needed to identify, collect, separate, transport and process these organic residuals. Development of best management practices will ensure to availability of quality organic residuals for entering bioenergy production.

Research also includes developing novel technologies to generate synthesis gas and/or electricity from dairy waste, municipal solid waste and sewage sludge.

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

**Extension**

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites other than eXtension</li> </ul>

**3. Description of targeted audience**

The target audience includes traditional petroleum and natural gas energy companies, farmers, landowners, seed companies, start-up companies in bioenergy, electric generating companies, and the general public.

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

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

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

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

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

### **1. Output Measure**

- # of educational programs conducted.
- # of research-related projects.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

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

O. No	Outcome Name
1	# of people reporting knowledge gained through participation in educational activities.
2	# of people reporting a willingness to adopt practices through participation in educational programs.

**Outcome # 1**

**1. Outcome Target**

# of people reporting knowledge gained through participation in educational activities.

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

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

- 111 - Conservation and Efficient Use of Water
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 402 - Engineering Systems and Equipment

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

- 1862 Extension
- 1862 Research

**Outcome # 2**

**1. Outcome Target**

# of people reporting a willingness to adopt practices through participation in educational programs.

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

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

- 111 - Conservation and Efficient Use of Water
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 402 - Engineering Systems and Equipment

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

- 1862 Extension
- 1862 Research

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes

- Public Policy changes

### **Description**

The factors listed above could have either positive or negative effects on the educational programs and research activities. The issue of sustainable energy requires an inter-disciplinary response to development of practices and sharing of information. External factors affecting individual disciplinary fields can impact the ability to develop and deliver information on sustainable energy.

Our regional weather dynamics can have an extremely adverse effect on our applied systems research. Economic, appropriations, and policy changes will determine our ability to address focus areas. Crop and energy markets, crop insurance policy, as well as government regulations will direct our focus as landowners and end-users seek our knowledge to address plant and environmental systems needs.

## **V(K). Planned Program - Planned Evaluation Studies**

### **Description of Planned Evaluation Studies**

Participants in selected programming activities will be administered a Retrospective-Post Test immediately after an educational activity. The issue-based questions will record the knowledge/awareness of the participants before and after the activity. Case studies will be implemented to evaluate the effectiveness of specific educational programs at reaching their target audience.

Methods to address data collection will include sampling of research outcomes based on observation and portfolio reviews. Care will be given to maintain confidentiality within the project framework while allowing outcomes to be clearly recorded based upon level of importance to stakeholders.

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

### **Program # 8**

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

Community Resource and Economic Development

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

##### **AgriLife Extension**

Community and economic development were identified by stakeholder input during both the 1999 and 2004 Texas Community Futures Forum, and during the 2011 Issues Identification Process, as issues of significant importance to the State of Texas. The validation processes have continued to document needs in predominately rural areas for ways to encourage economic growth, expand the number of well paying jobs, increase family income, and enhance quality of life. Specific issues include concerns about individual, community and regional economic viability and sustainable communities.

Educational programs are designed to increase the capacity of targeted Texans to respond to rapidly changing socioeconomic forces that impact their community and quality of life through increasing the understanding of these forces and potential responses from both an individual and community perspective. Specific programs will offer various strategies for enhancing community resources and economic development based on local needs assessment and interests. Educational programs will be available to support interest in home-based and micro-enterprises; to enhance identification and realization of entrepreneurial opportunities in agriculture and other natural resource industries; to develop tourism and recreational opportunities for local economic benefit; to support rural community leaders and economic developers with data for analysis and interpretation; to foster workforce development which includes important worker certification programs; and, to conduct community-based planning and community leadership training. Target audiences for the program consist of residents, elected and appointed officials, community leaders and potential leaders, existing and potential business owner/managers in and around the over 1200 communities in all 254 counties of the state--241 of which have expressly identified an issue related to community resources and/or economic development.

This program also supports the Texas AgriLife Extension Service state strategic plan imperatives related to Community Resource and Economic Development as well as the Texas AgriLife Research Strategic Plan imperative to enhance competitiveness, prosperity, and sustainability of urban and rural agricultural industries. A major goal of the bioenergy research conducted by AgriLife Research is economic development of rural communities through distributed energy and systems for the production of dedicated bioenergy feedstocks.

##### **Cooperative Extension Program**

This program provides technical and educational assistance to low-income, agricultural and traditional business clientele to help them establish, maintain and expand their businesses. The program also facilitates the creation of additional jobs and increase community awareness of programs by way of mass marketing social networking, information delivery on small business and community & economic development opportunities, small business loan application assistance and packaging. Staff also provides hands-on training on agri-business crops through farmers markets, community gardens production, and farm efficiencies that support sales production, profit, expense reduction, and entrepreneurship.

In addition, this program provides assistance to low-income families and individuals on asset building resources that will facilitate an overall increase of the standard of living for families and communities. Community development specialist will work with individuals, communities, and groups, to inform and educate them on issues related to sustainable housing, disaster response, community protection and

safety, civic engagement senior programs and resources, programs for limited resource individuals, community and organizational viability assessments, poverty reduction, asset and wealth building, saving and investing, credit building, debt management, and budgeting among others. The housing programs initiated by the unit support home ownership, foreclosure prevention, individual savings through refinance, energy savings, and housing rehabilitation.

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

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

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

**6. Expending other than formula funds or state-matching funds :** No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
504	Home and Commercial Food Service	5%	0%	0%	0%
602	Business Management, Finance, and Taxation	10%	60%	0%	0%
608	Community Resource Planning and Development	50%	20%	0%	0%
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	30%	0%	0%	0%
806	Youth Development	5%	10%	0%	0%
903	Communication, Education, and Information Delivery	0%	10%	0%	0%
	<b>Total</b>	100%	100%	0%	0%

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

**1. Situation and priorities**

**AgriLife Extension**

Economic development happens at the local level. Even though state and federal agencies can be good partners, in the end it is up to each community to take steps to enhance its own local economy. But, local Texas economies and populations are changing rapidly. Some rural counties are losing population, and cultural diversity is adjusting sharply in some areas. These changes are driven largely by socioeconomic drivers in the broader society and economy to include agricultural and other national policy developments, international trade and other global economic conditions as well as the dynamic situation in regions and the state. Local community leaders, resource owners and other businesses need greater knowledge and tools to address these changes positively to ensure the continued economic and social viability of their communities. Rural Texans generally have lower incomes than their urban counterparts. Stakeholder input provided by over 10,000 Texans in all 254 counties of the state through the Texas Community Futures Forum indicated that issues associated with development of their communities are pervasive and a very



high priority. Specific issues include concerns about individual, community and regional economic viability, maintenance of a high quality of life, and creating jobs that will attract rural youth back to the communities.

### **Cooperative Extension Program**

In Texas, every county in the 1890 Extension program serves has identified economic growth and development as an issue or problem. This was revealed through the program development process of long range planning. Stakeholders including clientele, community and county leaders, advisory committee members, and agency and organization representatives ranked this issue as priority for the 1890 Extension program to address. Business development activity lags in traditionally agricultural and natural resource dependent communities among low-income and underrepresented groups. This was ascertained by the Rural Business-Cooperative Service. This is also true in suburban and urban areas for these groups. Specific recommendations have been made to provide assistance to small farmers in helping them to establish, maintain and expand their farming operations in addition to providing technical assistance to traditional business owners and those wanting to start a business. These recommendations are expected to result in the improvement of economic conditions among the low-income and an increase in the number of jobs available to them.

In the counties being served by the 1890 Cooperative Extension Program, there is a shortage of the utilization of community assistance programs and asset building resources. Over the last decade, home ownership has plummeted and foreclosures have dramatically increased. Rural communities are unlike urban communities where, in most cases, needed resources and facilities are a part of the community infrastructure. Many of the rural communities are experiencing difficulty in obtaining basic needed resources that ultimately affect and increase their standard of living or quality of life.

## **2. Scope of the Program**

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

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

### **1. Assumptions made for the Program**

#### **AgriLife Extension**

(1) Residents, elected officials, and other leaders desire to positively impact their community's economic viability and quality of life. (2) Research-based knowledge relevant to community and economic development that is timely, understandable and usable can be conveyed to Texas communities and the citizens of those communities through multiple delivery methods. (3) Communities can mobilize local resources in coordination and collaboration with external regional and state resources to enhance community development, improve family income opportunities, and foster positive change.

### **Cooperative Extension Program**

Business development activity lags in traditional agricultural and natural resource dependent communities among low income and underrepresented groups. This is also true in suburban and urban areas. Both county and headquarters staff will work together in implementing the program to address this issue. Most of the technical information will be provided by technical subject matter specialists and project personnel.

However, county staff will also provide technical information and assistance. County staff and volunteers will be charged with the responsibility of identifying clientele, individuals and groups that are interested in receiving technical help in the areas of business development, maintenance and expansion. Technical assistance will be provided on an individual basis and in groups. Clientele receiving assistance will establish and maintain profitable businesses and create additional employment opportunities.

The implementation of this program is expected to get residents of small towns and rural low-income neighborhoods to take advantage of community programs, neighborhood initiatives, and participate in asset building programs that will empower them and increase their overall quality of life. In working with county staff and local leaders, small towns and communities will organize and work on issues that are important to the community such as housing, neighborhood clean-up projects, community center development, parks, and farmers markets. Some of the organized groups will apply for and receive their 501(c) 3 status. Staff will also work with communities to address poverty, family financial management, asset building, and opportunities available to the community at large by way of one-on-one counseling, trainings and workshops

In order to capitalize on the use of media technology by community members, staff will use social media outlets such as Facebook, twitter, LinkedIn, Internet radio, and FM radio to promote programs that will increase the overall standard of living for underserved Americans.

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

### **AgriLife Extension**

(1) Texas communities gain knowledge supporting the planning and implementation of successful economic development strategies. (2) Community officials and landowners/managers will effectively evaluate nature tourism resources, facilities, and programs as part of their operations and development planning. (3) Texas youth and adults prepared to participate fully in the 21st century workforce. (4) Present and potential community and organization leaders increase knowledge and abilities in leadership needed to effectively support the development of their communities. (5) Texans and their communities become more resilient by effectively preparing for and recovering from disasters.

### **Cooperative Extension Program**

Small businesses will be trained through participating in seminars and one-on-one technical assistance. Specialist and agents will provide loan packaging assistance and business planning. Community members will be made aware of and utilize government programs available to low-moderate income individuals. Low income individuals and families will acquire and maintain housing that meets approved government inspection standards. Low-income communities/neighborhoods will acquire, maintain and enhance community facilities. Clientele will be trained in homeownership, foreclosure prevention, and asset building.

Networks will be established and communities will be made aware of programs through the use of mass media marketing.

## **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
2017	25.0	10.0	0.0	0.0
2018	30.0	15.0	0.0	0.0
2019	30.0	15.0	0.0	0.0
2020	30.0	15.0	0.0	0.0
2021	30.0	15.0	0.0	0.0

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

**1. Activity for the Program**

**AgriLife Extension**

Provide training and curriculum materials to County Extension Agents and volunteers for the purpose of conducting educational programs on community leadership, workforce preparedness, adult and youth entrepreneurship, emergency management, and nature based tourism at the county level. Specialists will provide in-depth educational programs to targeted audiences relative to community and economic development strategies, based on local needs. Provide multi-county, regional and statewide educational programs on various topics to business owners and community stakeholders utilizing specialist faculty and other government and private sector partners. Coordinate and collaborate with state and federal agencies in rural development activities as well as work with regional rural development centers in curriculum and professional development. Provide technical assistance to communities in analysis of various socioeconomic databases or surveys. Continue to foster working relationships with rural community colleges to obtain support and follow-up for local educational activities. Expand web-based information delivery relative to community resource and economic development topics.

**Cooperative Extension Program**

- Conduct educational programs
- Conduct business development seminars
- Provide one-on-one consultations
- Assist clients with writing business plans
- Maintain social media sites

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

**Extension**

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

### 3. Description of targeted audience

#### **AgriLife Extension**

Primary target audiences for the program consist of residents, elected and appointed officials, community leaders/potential leaders (including youth), individuals with specific workforce training needs, and existing and potential business owner/managers in and around the over 1,200 communities in all 254 counties of the state of Texas.

#### **Cooperative Extension Program**

Rural communities, low-income individuals, underrepresented groups, limited resource business owners and small farm and potential small farm producers.

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

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

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

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

### V(H). State Defined Outputs

#### 1. Output Measure

- # of group educational sessions conducted.
- # of state or regional leadership conferences held for county officials or industry groups.
- # of one-on-one technical assistance/consultations.
- Estimated hours spent consulting individuals
- # of youth trained in entrepreneurship.
- # of volunteers involved in CED activities.

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

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

O. No	Outcome Name
1	Percent of landowners/managers participating in group educational meetings on effectively evaluating nature-based tourism resources that increased their knowledge.
2	Percent of participants of in-depth leadership educational programs who increase knowledge of community and individual leadership principles.
3	Number of participants in workforce development or continuing education training activities conducted who increase knowledge to support their current employment needs.
4	The number of participants who enroll in Individual Development Account programs.
5	Dollar amount of small business and home loans assisted with throughout the State of Texas.
6	Percentage of youth who start selling products or plan to sell products and services who received training on Entrepreneurship or financial literacy.
7	Dollar amount of small business and agri-businesses applying for financial assistance in support of their enterprise
8	Number of community gardens developed, farmers markets, community supported agriculture and/or income generated through the TASTE program.

**Outcome # 1**

**1. Outcome Target**

Percent of landowners/managers participating in group educational meetings on effectively evaluating nature-based tourism resources that increased their knowledge.

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

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

- 602 - Business Management, Finance, and Taxation
- 608 - Community Resource Planning and Development

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

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Percent of participants of in-depth leadership educational programs who increase knowledge of community and individual leadership principles.

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

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

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 806 - Youth Development

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

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Number of participants in workforce development or continuing education training activities conducted who increase knowledge to support their current employment needs.

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

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

- 504 - Home and Commercial Food Service

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 806 - Youth Development

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

- 1862 Extension

**Outcome # 4**

**1. Outcome Target**

The number of participants who enroll in Individual Development Account programs.

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

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

- 602 - Business Management, Finance, and Taxation
- 806 - Youth Development

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

- 1890 Extension

**Outcome # 5**

**1. Outcome Target**

Dollar amount of small business and home loans assisted with throughout the State of Texas.

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

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

- 602 - Business Management, Finance, and Taxation
- 608 - Community Resource Planning and Development

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

- 1890 Extension



**Outcome # 6**

**1. Outcome Target**

Percentage of youth who start selling products or plan to sell products and services who received training on Entrepreneurship or financial literacy.

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

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

- 608 - Community Resource Planning and Development
- 806 - Youth Development

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

- 1890 Extension

**Outcome # 7**

**1. Outcome Target**

Dollar amount of small business and agri-businesses applying for financial assistance in support of their enterprise

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

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

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities

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

- 1890 Extension

**Outcome # 8**

**1. Outcome Target**

Number of community gardens developed, farmers markets, community supported agriculture and/or income generated through the TASTE program.

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

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

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities

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

- 1890 Extension

### **V(J). Planned Program (External Factors)**

#### **1. External Factors which may affect Outcomes**

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

#### **Description**

Communities, their residents and local economies are substantially influenced by external factors in today's interrelated socioeconomic situation. External factors are not only domestic but global in scope. Uncertainty in future federal and state appropriations could be also an external factor.

### **V(K). Planned Program - Planned Evaluation Studies**

#### **Description of Planned Evaluation Studies**

The common strategies employed for evaluation studies involve the use of post, pre/post and retrospective post studies. Use of these strategies will be contingent upon the type of data to be collected, the target audience, and the specific educational program.

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

### **Program # 9**

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

Chronic Disease, Health, and Wellness

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

##### **AgriLife Extension**

##### **Diabetes Programs**

Diabetes education programs are highlighted by the Do Well, Be Well with Diabetes (DWBW) program. Do Well, Be Well with diabetes taught in 5 sessions including an overview, basic nutrition, and self-care management topics help people with diabetes learn the skills needed to manage their disease successfully. Evaluation measures include both pre- and post- surveys and matched blood glucose monitoring questions collected online. Family and Consumer Science agents are trained using an online conferencing system to work with local health care providers and people with diabetes to plan, implement and evaluate this program in their counties.

Two additional diabetes education programs, ¡Si, Yo Puedo Controlar Mi Diabetes! and Wisdom, Power and Control, were developed and tested to address special needs of more unserved people needing diabetes education. These two programs address the need for delivery of diabetes education in Spanish, ethnic foods, and lower literacy.

Diabetes research is conducted by AgriLife Research through the Center for Obesity Research and Program Evaluation and targets foods and food ingredients which contribute to a reduced risk of obesity and obesity-linked diseases such as diabetes, cardiovascular, etc. This research supports the AgriLife Research Strategic Priority to integrate basic and applied research at the nexus of food and health.

The Diabetes Education program supports the AgriLife Extension Roadmap goal of improving the health, nutrition, safety, and economic security of Texas families.

##### **Exercise and Wellness Programs**

The mainstay of exercise and wellness programming is Walk Across Texas! Walk Across Texas! is an eight week program to help people of all ages support one another to establish the habit of regular physical activity. Three options are offered to participants: walk in teams of eight, classes at schools, or individually. Participants log miles and use programs on <http://walkacrosstexas.tamu.edu>. The program was initiated in 1996. Walk Across Texas! is a best practice type physical activity program as described by the Centers for Disease Control at <http://www.thecommunityguide.org/>. It was recognized as a best program by the Texas Department of State Health Services in 2006.

The Exercise and Wellness program supports the AgriLife Extension strategic goal of improving the health, nutrition, safety, and economic security of Texas families and the AgriLife Research Strategic Plan imperative to improve public health and well-being.

##### **Cancer Prevention Programs**

This program supports agent activities providing cancer risk reduction and early detection education throughout Texas, particularly for underserved groups living in rural areas as well as research programs which target the development of diagnostic tools for the early detection of cancer.

The Friend to Friend program supports the AgriLife Extension Roadmap goal to improve the health, nutrition, safety, and economic security of Texas families and the AgriLife Research Strategic Plan

imperative to improve public health and well-being.

**Cooperative Extension Program**

A large number of Texas citizens, whether living in rural or urban areas, socially disadvantaged or middle income are experiencing problems with diet related illnesses. The prevalence of obesity in more than 60% of the adult population has tripled in children and adolescents. Among children and adolescents, 15% are overweight and more than 70% have diseases that are associated with obesity such as hypertension, Type 2 diabetes and elevated cholesterol levels. In Texas, obesity related diseases including diabetes, hypertension, cancer and heart disease are found in higher rates among various members of racial-ethnic minorities (e.g., African American and Hispanic American).

This program supports agent activities in providing information on improving diet, exercise and overall health by consuming nutritious fruits and vegetables, while reducing foods that are high in fat and sugars.

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

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

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

**6. Expending other than formula funds or state-matching funds :** No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
723	Hazards to Human Health and Safety	35%	15%	50%	0%
724	Healthy Lifestyle	65%	35%	50%	0%
802	Human Development and Family Well-Being	0%	50%	0%	0%
	<b>Total</b>	100%	100%	100%	0%

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

**1. Situation and priorities**

**AgriLife Extension and Cooperative Extension Program**

**Diabetes Programs**

The number of Americans with diabetes (29.1 million) is projected to increase 43 percent by 2020. Health-care costs now average \$13,700 per person with diabetes costing the United States \$254 billion. \$176 billion (72 percent) is spent on health care and \$69 billion (28 percent) in lost productivity. Just over 9 percent of the population has diagnosed diabetes, but almost \$1 of every \$5 spent on health care is for people with diabetes. Currently, only 7 percent of people with diabetes are at recommended levels for blood glucose, blood pressure, and blood cholesterol. Annual cost of diabetes to Texas is estimated at \$28.8 billion. In Texas 1.8 million people have diabetes; another 440,469 have diabetes, but do not know it. Poor self-care management increases health care costs for people with diabetes. People with diabetes

who maintain their blood glucose, blood pressure, and cholesterol numbers within recommended ranges can keep their costs, health risks, quality of life, and productivity very close to those without the disease.

#### Exercise and Wellness Programs

Twenty-five percent of Texans are obese. Twenty-five percent of children are obese. Only 25 percent of adults and 27 percent of high school students get regular, moderate exercise. 29 percent of Americans adults are not physically active at all. Estimated direct costs of obesity and inactivity together account for approximately 9.4 percent of U.S. health expenditures. Regular physical activity and controlling weight can significantly reduce the incidence and impact of chronic diseases like heart diseases, stroke, diabetes, cancer, high blood pressure and depression. Regular physical activity is also associated with fewer hospitalizations, physician visits, and medications.

#### Cancer Prevention Programs

Women living in rural areas of Texas are less likely than their urban counterparts to have had a mammogram or Papanicolaou (Pap) test within the past two years. Screening and diagnostic services tend to be "disconnected" and not easy to locate or access in rural Texas, especially for underserved and older women. As a result, women in these rural areas tend to be diagnosed in later stages of breast or cervical cancer, making treatment more difficult and impairing their future quality of life.

## **2. Scope of the Program**

- In-State Extension
- In-State Research

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

### **1. Assumptions made for the Program**

#### **AgriLife Extension and Cooperative Extension Program**

##### Diabetes Programs

Research has shown that people with diabetes can learn effective self-care skills for their type 2 Diabetes with teaching delivered by volunteer health care professionals using a curriculum such as Do Well, Be Well with Diabetes, ¡Si, Yo Puedo Controlar Mí Diabetes! and Wisdom, Power and Control.

##### Exercise and Wellness Programs

People are more likely to make a behavior change, such as increased physical activity, a regular part of their daily lives if they are provided peer support over a time period of 6 to eight weeks. Moderately intensive walking, 30 minutes, 5 days per week, is effective in reducing the onset of chronic diseases such as type 2 diabetes as shown by the Diabetes Prevention Program.

##### Cancer Prevention Programs

A one-time, evidence-based program can lead to improved screening and earlier detection of breast and cervical cancer.

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

#### **AgriLife Extension and Cooperative Extension Program**

##### Diabetes Programs

People with type 2 diabetes will improve the management of their disease after attending one of these diabetes education series: Do Well, Be Well with Diabetes, ¡Si, Yo Puedo Controlar Mi Diabetes! or Wisdom, Power and Control.

Exercise and Wellness Programs

Participants in Walk Across Texas! who walk the eight weeks in teams of eight will significantly increase their physical activity level as measured by increased miles walked.

Cancer Prevention Programs

Reduce the burden and impact of cancer in Texas.

**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
2017	25.0	4.0	2.4	0.0
2018	25.0	4.0	2.4	0.0
2019	25.0	4.0	2.4	0.0
2020	25.0	4.0	2.4	0.0
2021	25.0	4.0	2.4	0.0

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

**1. Activity for the Program**

**AgriLife Extension and Cooperative Extension Program**

Diabetes Programs

Partner with local health care professionals to plan, implement and evaluate Do Well, Be Well with Diabetes, ¡Si, Yo Puedo Controlar Mi Diabetes! or Wisdom, Power and Control for underserved people with type 2 diabetes.

Exercise and Wellness Programs

A local coalition will recruit participants and provide leadership to implement Walk Across Texas! Teams of eight or classes of children at schools will be recruited to walk for eight weeks. Teams and classes are challenged to walk regularly for eight weeks, reporting their mileage on <http://walkacrosstexas.tamu.edu>, to achieve the goal of walking the approximate 830 miles across Texas on a map that allows comparisons of teams and class progress. Participants are personally recruited as well as groups like worksites, schools, churches and clubs using free media time.

Cancer Prevention Programs

County agents will work with local volunteers, regional cancer prevention program specialists, and patient navigators to implement Friend to Friend, an evidence based program, to increase the number of women

in rural, frontier, and border counties who find breast and cervical cancer earlier, when treatments are most effective. Once a year, a Friend to Friend event will be provided in 40-49 selected counties. Each event will include a presentation by a local physician, a chance to meet and make appointments with nearby clinical sources of mammograms and Pap tests, and a discussion group for networking support and finding solutions for problems like cost and transportation. Funding will be provided by the Cancer Prevention and Research Institute of Texas for transportation and clinical services to women needing assistance.

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

**Extension**

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● Demonstrations</li> <li>● Other 1 (Class handouts)</li> <li>● Other 2 (Cooking School handouts)</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites other than eXtension</li> <li>● Other 1 (novelas for Hispanic audiences)</li> <li>● Other 2 (faith-based outreach to others)</li> </ul>

**3. Description of targeted audience**

**AgriLife Extension and Cooperative Extension Program**

Diabetes Programs

The target audience is all people with type 2 Diabetes who need training to learn dietary and self-care management skills such as eating more healthfully (limiting carbohydrate intake, reducing fat and sodium and increasing fiber in meal plan), increasing physical activity, taking prescribed medications, checking their blood glucose levels, and regularly visiting their health care providers.

Exercise and Wellness Programs

Walk Across Texas! is open to anyone wanting to increase their physical activity level if they live in a community with a AgriLife Extension educator or have access to <http://walkacrosstexas.tamu.edu>.

Cancer Prevention Programs

Underserved rural women who are at risk for breast and cervical cancer.

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

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

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

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

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

### **1. Output Measure**

- Number of group educational sessions conducted.
- Number participating in educational efforts.

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



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

O. No	Outcome Name
1	Number of participants who report improved before meals blood glucose levels after attending 4 of the 5 Do Well, Be Well with Diabetes classes; and 5 of 6 ¡Si, Yo Puedo Controlar Mi Diabetes¡.
2	Increased number of miles walked per week at week one compared to week eight.
3	Number of people reporting knowledge gained through participation in cancer prevention educational activities.
4	Number of people reporting a willingness to adopt practices through participation in cancer prevention educational programs.
5	Number of individuals who gain knowledge in Health and Wellness while attending workshops and conferences.

**Outcome # 1**

**1. Outcome Target**

Number of participants who report improved before meals blood glucose levels after attending 4 of the 5 Do Well, Be Well with Diabetes classes; and 5 of 6 ¡Si, Yo Puedo Controlar Mí Diabetes¡.

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

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

- 724 - Healthy Lifestyle

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

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Increased number of miles walked per week at week one compared to week eight.

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

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

- 724 - Healthy Lifestyle

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

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Number of people reporting knowledge gained through participation in cancer prevention educational activities.

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

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

- 723 - Hazards to Human Health and Safety
- 724 - Healthy Lifestyle

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

- 1862 Extension
- 1862 Research

#### **Outcome # 4**

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

Number of people reporting a willingness to adopt practices through participation in cancer prevention educational programs.

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

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

- 723 - Hazards to Human Health and Safety
- 724 - Healthy Lifestyle

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

- 1862 Extension
- 1862 Research

#### **Outcome # 5**

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

Number of individuals who gain knowledge in Health and Wellness while attending workshops and conferences.

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

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

- 802 - Human Development and Family Well-Being

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

- 1890 Extension

#### **V(J). Planned Program (External Factors)**

##### **1. External Factors which may affect Outcomes**

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

### **Description**

Any of the above factors could influence whether programs in this area meet their intended goals or are even sustained. External factors such as budget cuts, reduction in force, or loss of grant funding could decrease outcomes.

## **V(K). Planned Program - Planned Evaluation Studies**

### **Description of Planned Evaluation Studies**

#### **AgriLife Extension**

##### Diabetes Programs

Participants are given a pre-test at the beginning of the class series and post-test at the end of the Do Well, Be Well with Diabetes (DWBW) classes, ¡Si, Yo Puedo Controlar Mí Diabetes! or Wisdom, Power and Control class series to determine changes in measures such as blood glucose and self-care practices such as seeing a health care provider specializing in eye care to test for signs of retinopathy or making better food selections.

##### Exercise and Wellness Programs

Participants report their mileage every week on-line at <http://walkacrosstexas.tamu.edu>. Week one mileage is compared to week eight mileage to determine if there is improvement in physical activity levels.

##### Cancer Prevention Programs

Evaluators track the number of women attending Friend to Friend events and the number of them requesting help obtaining screening for breast and cervical cancer because they are not in compliance with American Cancer Guidelines. In addition, evaluators are tracking the number of women actually completing screenings, diagnostics, and the number of cancers discovered in our 40-49 target counties.

#### **Cooperative Extension Program**

- Surveys
- Pre and Post Test
- Interviews
- Monthly Reports will be used to collect data



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

### **Program # 10**

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

Childhood Obesity

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

##### **AgriLife Extension**

###### **Balancing Food & Play**

The Promoting Healthy Weight Initiative was established as a way to collectively pool resources within the Texas AgriLife Extension Service to address childhood obesity. A multi-disciplinary team developed an integrated, interactive third-grade enrichment curriculum on nutrition and physical activity. The curriculum is based on the Texas Essential Knowledge and Skills (TEKS). Twenty lessons enhance knowledge and skills related to MyPlate, physical activity and screen time.

###### **Extension OnLine Nutrition Training**

Online delivery of nutrition subject matter is made available to childcare workers, community nutrition educators, and other interested parties. Course modules are generally one hour in length and expose learners to evidence-based information and resources related to nutrition and best practice behaviors associated with healthful weight.

###### **WAT Youth Component**

The mainstay of exercise and wellness programming is Walk Across Texas! Walk Across Texas! is an eight week program to help people of all ages support one another to establish the habit of regular physical activity. Three options are offered to participants: walk in teams of eight, classes at schools, or individually. Participants log miles and use programs on <http://walkacrosstexas.tamu.edu>. Walk Across Texas! is a best practice type physical activity program as described by the Centers for Disease Control at <http://www.thecommunityguide.org/>. It was recognized as a best program by the Texas Department of State Health Services in 2006.

##### **AgriLife Research**

Research will be conducted in collaboration with State and Federal Women, Infant and Children Program leaders to provide data and programs to improve dietary habits of children and their parents or care givers. Research will also involve native American populations and the school lunch program.

##### **Cooperative Extension Program**

This program provides technical and educational information to limited resource families and individuals to help them understand the importance of nutrition and diet. Additionally, it heightens awareness of the relationship between high calorie food consumption and lack of exercise to health status. Research based information will also expand their knowledge and empower them to make better choices for their overall well-being.

**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 :** No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	50%	50%	0%	50%
724	Healthy Lifestyle	50%	50%	100%	50%
	<b>Total</b>	100%	100%	100%	100%

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

**1. Situation and priorities**

The prevalence of obesity in both adult and child populations exceeds Healthy People 2020 Goals. A large number of Texas citizens, whether living in rural or urban areas, social disadvantaged or middle income are experiencing problems with diet related illnesses including diabetes, hypertension, cancer and heart disease. Lifestyle behaviors associated with obesity include: consuming too many foods of non-nutritional value, eating portion sizes that are too large, spending too much time sedentary, and getting too little physical activity.

Children in particular are vulnerable to the deleterious consequences of excessive weight and the adoption of poor behaviors. Obesity and overweight often track into adulthood as do poor behavior choices learned or reinforced during childhood. As overweight or obese adults, these children will face higher healthcare costs and lower quality of life than their healthful weight peers. Therefore, educating children on nutrition and physical activity with the intent to reinforce positive lifestyles and the adoption of healthy behaviors can help prevent or slow the tendency toward unwanted weight gain.

Likewise, children in childcare need informed supportive caregivers who implement and model best practices within their facility. Caregivers need to provide structure and policies which engage children and their families to adopt best practices.

**2. Scope of the Program**

- In-State Extension
- In-State Research

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

**1. Assumptions made for the Program**

It is assumed many adults and children lack knowledge and skills related to nutrition and best practice behaviors associated with healthful weight. We assume knowledge and skill enhancement will result in the adoption of healthful behaviors when delivered within a supportive and enabling environment.

It is assumed that Extension faculty and staff network with local and state agencies, organizations, faith-based communities, schools, and other groups to engage the target audiences in meaningful, learning activities and experiences whether delivered face-to-face or technology- assisted.

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

**AgriLife Extension**

**Balancing Food & Play**

The Balancing Food & Play curriculum was designed to improve knowledge and behaviors related to:

- \* snacking on fruits and vegetables,
- \* drinking milk with meals and water with snacks,
- \* encouraging at least 60 minutes of physical activity each day, and
- \* limiting screen time to two hours or less per day.

**Extension OnLine Nutrition Training**

Course offerings are developed to enhance educator and caregiver knowledge and skills related to nutrition and best practice behaviors associated with healthful weight.

Evidence-based best practice behaviors associated with healthy weight are:

- Make half your plate fruits and vegetables
- Limit sugar sweetened beverages
- Decrease TV to no more than 2 hours each day
- Be physically active at least 1 hour each day
- Prepare more meals at home rather than eating out
- Eat at the table as a family at least 5 times a week
- Eat a healthy breakfast each day
- Involve the whole family in lifestyle changes
- Allow the child to decide how much food to eat and do not totally restrict certain foods
- Get enough sleep each night

**WAT Youth Component**

Participants in Walk Across Texas! who walk the eight weeks in teams of eight will significantly increase their physical activity level as measured by increased miles walked.

**AgriLife Research**

Participants in the Women, Infant and Children Program and persons served by Indian Tribal Organizations will consume a more healthful diet. School lunches will also be improved through our technical assistance leading to an increase in inclusion of whole grain foods in menus offered to school children.

**Cooperative Extension Program and Cooperative Agricultural Research Center**

The goals of this program are to: provide families with relevant nutrition education and access to enhance food resources, present opportunities for participants to experience a variety of foods, increase consumption of vegetables and fruits, and engage in regular physical fitness activities.

**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
2017	3.0	8.0	1.0	1.0
2018	3.0	8.0	1.0	2.0
2019	3.0	8.0	1.0	2.0



2020	3.0	8.0	1.0	2.0
2021	3.0	8.0	1.0	2.0

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

**1. Activity for the Program**

**AgriLife Extension**

**Balancing Food & Play**

The curriculum contains three elements: 20 lesson plans, 8 take-home reading assignments, and 41-page student journals.

**Extension OnLine Nutrition Education**

Online education courses, generally one-hour in length, include learning objectives, subject matter content, supporting handouts, application activities, and references.

**WAT Youth Component**

A local coalition will recruit participants and provide leadership to implement Walk Across Texas! Teams of eight or classes of children at schools will be recruited to walk for eight weeks. Teams and classes are challenged to walk regularly for eight weeks, reporting their mileage on <http://walkacrosstexas.tamu.edu>, to achieve the goal of walking the approximate 830 miles across Texas on a map that allows comparisons of teams and class progress.

**AgriLife Research**

Research is conducted in collaboration with State and Federal Women, Infant and Children Program leaders to provide data and programs to improve dietary habits of children and their parents or care givers. Research also involves native American populations and the school lunch program.

**Cooperative Extension Program and Cooperative Agricultural Research Center**

The Cooperative Extension Program provides a series of educational programs designed to equip parents with better meal preparation skills and persons coping with and at risk for chronic illnesses. Education programs are provided through a series of nutrition educational workshops and programs to special interest groups, on-site food demonstrations, educational displays, fact sheets, newsletters and social media (FaceBook). Parents and caregivers learn the importance of balancing meals based upon MyPlate guidelines and implementing physical activity.

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

**Extension**

<b>Direct Methods</b>	<b>Indirect Methods</b>
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites other than eXtension</li> </ul>

### 3. Description of targeted audience

#### **AgriLife Extension**

##### Balancing Food & Play

Third grade students in Texas Schools

##### Extension OnLine Nutrition Training

Childcare providers, parents and other interested adults.

##### WAT Youth Component

Youth in Texas Schools

#### **AgriLife Research**

Parents and others who care for children, school lunch program administrators, and native Americans.

#### **Cooperative Extension Program and Cooperative Agricultural Research Center**

Minority families and individuals

Senior adults

Single parents

Secondary education and college students

Persons coping with and at risk for chronic illnesses

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

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

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

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

### V(H). State Defined Outputs

#### 1. Output Measure

- # of group educational methods conducted.
- # of classes/workshops addressing nutrition and health.

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

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

O. No	Outcome Name
1	The percent of youth that reported engaging daily in 60 minutes or more of physical activity. (National Indicator Outcome 2.1d)
2	Percentage increase the number of children reporting decreased sweetened beverage intake. (National Indicator Outcome 1.2c)
3	The percent of youth that reported increasing their physical activity and/or reducing sedentary. (National Indicator Outcome 2.1c)
4	Number of participants who understand and use My Plate in meal buying and preparation, become aware of diet related diseases, understand the connection between diet and exercise, increase consumption of fruits and vegetables.
5	Number of participants modify recipes to decrease amount of calorie and adopt healthy eating habits.
6	Number of miles logged by youth WAT participants.

**Outcome # 1**

**1. Outcome Target**

The percent of youth that reported engaging daily in 60 minutes or more of physical activity. (National Indicator Outcome 2,1d)

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

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

- 724 - Healthy Lifestyle

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

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Percentage increase the number of children reporting decreased sweetened beverage intake. (National Indicator Outcome 1,2c)

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

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

- 724 - Healthy Lifestyle

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

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

The percent of youth that reported increasing their physical activity and/or reducing sedentary. (National Indicator Outcome 2,1c)

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

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

- 724 - Healthy Lifestyle

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

- 1862 Extension

#### **Outcome # 4**

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

Number of participants who understand and use My Plate in meal buying and preparation, become aware of diet related diseases, understand the connection between diet and exercise, increase consumption of fruits and vegetables.

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

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

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

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

- 1890 Extension
- 1890 Research

#### **Outcome # 5**

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

Number of participants modify recipes to decrease amount of calorie and adopt healthy eating habits.

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

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

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

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

- 1890 Extension

#### **Outcome # 6**

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

Number of miles logged by youth WAT participants.

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

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

- 724 - Healthy Lifestyle

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

- 1862 Extension

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

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

**Description**

Any of the above factors could affect the implementation and number of participants in these programs. For example, if the Texas legislature cut funding for any Texas Extension program, there would be less county educators to provide leadership to the program at the local level. If a national crisis such as an act of bio-terrorism happened, funding and activity priorities would change.

**V(K). Planned Program - Planned Evaluation Studies**

**Description of Planned Evaluation Studies**

Balancing Food and Play

Pre/post survey instruments capture changes in knowledge and self-reported behaviors.

WAT Youth Component

Evaluation strategies include surveys, observation, and recording of behaviors (such as miles walked).

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

### **Program # 11**

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

Food Safety

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

##### **AgriLife Extension**

Texas has an estimated 1 million people employed by the food service industry. To meet the need for quality food safety education in Texas retail food establishments, the Food Protection Management program was developed. This program consists of two courses which are designed to increase food safety knowledge and behaviors among food service employees. One course is the Certified Food Manager (CFM) course. Using the curriculum, Food Safety: It's Our Business, the course is conducted at the county level by Extension agents over a one or two-day period. Educational lessons and activities of the program focus on the following areas: (1) Enhanced use of temperature control measures in food service, such as thermometer use, time and temperature control, safe internal cooking and holding temperatures, thawing procedures and general storage temperatures; (2) Increased adoption of proper hygiene and hand washing practices of food service employees and managers; (3) Increased adoption of practices to avoid cross-contamination such as proper storage, washing and sanitizing of utensils and equipment between use, and employee hygiene practices; and (4) Increased adoption of pest management practices to keep insects, rodents and other disease-causing pests under control. County Extension Agents, provide the program in more than 80 counties throughout the state. Upon completion of the course, participants take a national CFM exam for certification purposes.

The other course offered is a food handler's course. Designed for the employees who work in food service but not in a manager or trainer role, this 2-hour course features the basics of retail food safety including personal hygiene, time/temperature abuse and cross-contamination. The course is offered in person or on-line.

##### **AgriLife Research**

Research is conducted to develop new technology to both detect and prevent the contamination of food products by bacterial, viral, and parasitic pathogens as a result of either accidental or intentional introduction.

The Food Safety program directly supports the AgriLife Research Strategic Priority integrate basic and applied research at the nexus of food and health, and the AgriLife Extension Roadmap goal to improve the health, nutrition, safety, and economic security of Texas families. This program also indirectly supports the AgriLife Research Strategic Priority to mitigate insect vector-borne diseases.

##### **Cooperative Extension Program**

This program provides technical and educational information to limited resource families and individuals to help them understand the importance of food safety. Additionally, it heightens awareness of the relationship between basic sanitation practices when handling food reduces waste, conserve nutrients and prevent foodborne illness.

##### **Cooperative Agricultural Research Center**

The Food Systems Program (FSP) supports the land grant-mission and goals of USDA through addressing issues of regional and national importance of ensuring high-quality, affordable, and safe foods. Critical issues facing the underserved population locally, nationally and globally are the availability of affordable, nutritious, and safe food. The goals of the FSP are: 1. To increase the body of knowledge in



the understanding of how to ensure that food products are safe and ; 2. To increase the body of knowledge in the areas of nutritional quality, affordability and safety of meat, milk, fruits & vegetables, and value-added products. To accomplish these goals research will be conducted to develop methods for enhancing the quality of food and food products, examine strategies for mitigating the transmission of natural food borne pathogens, examine methods for the reduction of natural and introduced toxicants in foods and feed, examine nutrient quality enhancement of food and food products, examine mechanisms involved in nutrient utilization and diseases, evaluate strategies for minimizing the transfer of microbial pathogens during food handling, evaluate strategies for translating nutrition knowledge into better food selection.

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

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

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

**6. Expending other than formula funds or state-matching funds :** No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
502	New and Improved Food Products	0%	25%	0%	50%
701	Nutrient Composition of Food	0%	10%	0%	20%
703	Nutrition Education and Behavior	0%	50%	0%	10%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	100%	15%	100%	20%
	<b>Total</b>	100%	100%	100%	100%

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

**1. Situation and priorities**

The Food Safety program supports the land grant-mission and goals of USDA through addressing issues of ensuring high-quality, affordable, and safe food. Critical issues facing the underserved populations locally, nationally and globally involve the incidences of increases in illnesses and diseases resulting from contamination in the food chain. These issues have been defined with input from discussion groups at the University including researchers, extension program specialists, staff, students and from reviews of current and related literature, including the strategic plans of USDA agencies (eg. ARS, NIFA, the National Institute of Health (NIH), the Centers for Disease Control (CDC) and the Texas Department of Health and Human Services. Estimates from the Centers for Disease Control (CDC) predict that approximately 48 million Americans become ill, 128,000 hospitalized, and 3,000 die of foodborne illnesses annually. Economic costs of foodborne illness exceed \$77 billion annually, excluding costs to the food industry and public health agencies. The outbreaks of food borne illnesses varies in method of spreading but a significant number of incidents are widespread affecting individuals in various places with the onset of symptoms occurring over a several week time span. Based upon CDC reports and unpublished data here at the Center, in addition to technological advances in detection and control of pathogens, education of food handlers and the utilization of food safety practices may be the most effective manner to reduce the

risk of increasing the pathogen population. Projects within the FSP address issues of high national importance regarding the high incidence of food borne illnesses through research activities focusing on mechanisms and biomarkers of nutritionally and foodborne illnesses and disease, improving the organoleptic and functional qualities and safety of food. Furthermore the translation of research knowledge into effective programs for reducing these problems is not fully understood. Increasing the nutritional value of foods (whole, enriched, fortified or enhanced) through value added efforts and improving the organoleptic characteristics of foods have a major role in consumer acceptance and food choices to reduce the illnesses associated with poor diet and inadequate nutrient intake.

## **2. Scope of the Program**

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

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

### **1. Assumptions made for the Program**

#### **AgriLife Extension**

It is assumed that many families and adults lack basic knowledge regarding the importance of food safety. It is assumed that the Family & Consumer Sciences staff will network with local agencies and organizations, faith-based communities, schools, and other groups to engage the target audience in meaningful, informal learning activities and experiences. It is assumed that the Outcome and Output plans and logic model concept will produce results for youth and adults engaged.

In addition, for AgriLife Extension programs, it is assumed that:

- 1) County Extension agents will continue to become instructors for the program.
- 2) Program participants are able to practice the knowledge and skills learned during the program in their place of work (the food service establishment).
- 3) Evaluation of the Certified Food Manager course is based, in part, on the pass rate for the CFM exam.
- 4) Evaluation of the new Food Handler's course will be evaluated by assessing change in knowledge (post vs. pre).

#### **Cooperative Agricultural Research Center**

The FSP recognizes that safe and affordable food are at the very heart of our existence and without it life would end. The quality of life and well-being of our society is impacted by a variety of factors including unsafe and/or contaminated food. The exposure to food borne pathogens is an issue that must be addressed to reduce the incidence of illnesses and diseases in the population. Research that will examine the quality and the functional properties of meats, milk, fruits & vegetables and value-added products is significant in food manufacturing and processing technologies. Additionally, research activities will investigate the relationship between and the mechanisms of food/food component and nutritionally related diseases; and identify evaluation tools, methods and instrumentation for measuring the relationship between foods and/or food components nutritionally related diseases and illnesses. These activities will help to reduce the incidence of these types of illnesses and diseases. The acceptance of any food or food product is not only determined by its nutritional and organoleptic qualities but also by its safety. Food quality and safety are the most important factors for consumer's acceptance and consumption and are issues that are federally regulated. The movement of pesticides, herbicides and antibiotic residues throughout the food chain is of foremost importance. Research that will examine the presence of these hazards along the food chain from the farm to the table will provide knowledge for the withdrawal process, processing methods and alternatives to traditional methods for the preservation and increase in production

of meat and milk products.

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

**AgriLife Research and Extension**

The ultimate goals of this program are: (1) to train food service employees, managers, and owners the knowledge and skills needed to improve food safety practices that are critical to reducing the risk of a foodborne disease outbreak; (2) to motivate program participants to return to their place of work and train additional workers in the food service establishment so that others will adopt the food safety behaviors featured in the program; (3) conduct food safety research that reduces foodborne diseases linked to bacterial, viral, and parasitic pathogens.

**Cooperative Extension Program**

The goals of this program are to: provide limited resource families with relevant information to develop prevent food-borne illnesses. Families will know how to keep food safe when shopping, use proper kitchen safety procedures to prevent cross contamination which can contribute to illness. Also, families will practice personal cleanliness when handling food.

**Cooperative Agricultural Research Center**

The Food System Program goals are: 1) To increase the body of knowledge in the understanding of nutrients and mechanisms implicated in illnesses and diseases; and 2) To increase the body of knowledge in the area of quality and safety of meat, milk, fruits & vegetables and value-added products.

**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
2017	5.0	4.0	3.0	8.0
2018	5.0	4.0	3.0	8.0
2019	5.0	4.0	3.0	10.0
2020	5.0	4.0	3.0	10.0
2021	5.0	4.0	3.0	10.0

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

**1. Activity for the Program**

**AgriLife Extension**

County Extension Agents will be trained to become instructors for the Food Protection Management Program. Additional training will be provided/identified so that instructors can maintain their instructor qualification status per Agency guidelines. The program will be implemented in counties across the state that have a County Extension Agent who is able to teach the program. Program materials will be available in both English and Spanish.

The Certified Food Manager (CFM) course will be evaluated by assessing the pass rate on the CFM exam. The food handler's course also will be offered by qualified instructors (CEA-FCS) in both English and Spanish and via the use of distance education (on-line). Pre and post knowledge surveys (to assess change in knowledge) will be used to evaluate the course.

**Cooperative Extension Program and Cooperative Agricultural Research Center**

- Provide one-on-one consultations
- Conduct on-site food demonstrations
- Provide train-the-trainer opportunities
- Conduct educational programs and classes
- Teach a series of food safety classes to special interest groups
- Exhibit educational displays at various sites
- Conduct research activities centered around:
  - Developing methods for enhancing the quality of food and food products.
  - Developing technologies and techniques for producing value-added caprine products
  - Examining strategies for mitigating the transmission of natural food borne pathogens.
  - Examining methods for the reduction of natural and introduced toxicants (eg. antibiotics in milk and Salmonella) in foods and feed.
    - Examining nutrient quality enhancement of food and food products.
    - Examining mechanisms involved in nutrient utilization and diseases.
    - Evaluating strategies for minimizing the transfer of microbial pathogens during food handling.
    - Evaluating strategies for translating nutrition knowledge into better food selection.

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

**Extension**

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>• Education Class</li> <li>• Workshop</li> <li>• Group Discussion</li> <li>• Demonstrations</li> <li>• Other 1 (on-line course delivery)</li> </ul>	<ul style="list-style-type: none"> <li>• Newsletters</li> <li>• Web sites other than eXtension</li> <li>• Other 1 (Reports/Information Briefs)</li> <li>• Other 2 (Publications)</li> </ul>

**3. Description of targeted audience**

**AgriLife Extension**

Individuals who are employed in the retail food service industry. This includes cooks, managers, and owners who are affiliated with foodservice establishments including restaurants, school food service, bed and breakfasts, prisons, and other establishments that prepare and serve food to individuals.

**Cooperative Extension Program and Cooperative Agricultural Research Center**

Minority families and individuals  
 Senior adults  
 Single parents  
 Persons coping with and at risk for chronic illnesses  
 Youth

The primarily targeted audience is the underserved population living in the surrounding counties and the

Northwest Houston Corridor. This population is dominated by Hispanics and African - Americans. Also, this area has been designated by the State of Texas as Prairie View A&M University's service area.

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

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

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

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

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

#### **1. Output Measure**

- Number of group educational sessions conducted.
- Number of research-related projects.
- Number of on site demonstrations for adults and youth.
- Number of research workshops/presentations.
- Number of graduate/undergraduate students involved in research projects.

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

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

O. No	Outcome Name
1	Percentage increase in knowledge as a result of completing the food handler's course.
2	FPM Pass/Fail Rate - percentage of participants who pass the DSHS Certified Food Manager exam on the first attempt. (National Indicator Outcome 3.2)
3	Number of new and different value-added caprine products added to the food base and accepted by the target audience.
4	Number of limited resource clientele who adopts safer food handling practices.
5	Number of limited resource clientele who gain knowledge on the handling and availability of value added fruit & vegetable.

**Outcome # 1**

**1. Outcome Target**

Percentage increase in knowledge as a result of completing the food handler's course.

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

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

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

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

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

FPM Pass/Fail Rate - percentage of participants who pass the DSHS Certified Food Manager exam on the first attempt. (National Indicator Outcome 3,2)

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

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

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

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

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Number of new and different value-added caprine products added to the food base and accepted by the target audience.

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

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

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

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

- 1890 Extension
- 1890 Research

#### **Outcome # 4**

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

Number of limited resource clientele who adopts safer food handling practices.

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

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

- 703 - Nutrition Education and Behavior

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

- 1890 Extension

#### **Outcome # 5**

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

Number of limited resource clientele who gain knowledge on the handling and availability of value added fruit & vegetable.

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

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

- 502 - New and Improved Food Products
- 701 - Nutrient Composition of Food
- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

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

- 1890 Extension
- 1890 Research

#### **V(J). Planned Program (External Factors)**



## 1. External Factors which may affect Outcomes

- Government Regulations
- Competing Public priorities

### Description

#### **AgriLife Extension**

Individuals who are employed in the retail food service industry. This includes cooks, managers, and owners who are affiliated with foodservice establishments including restaurants, school food service, bed and breakfasts, prisons, and other establishments that prepare and serve food to individuals.

In addition, population and staff changes could also affect the outcome of the program, along with lack of available transportation, the economy, extreme weather conditions, and changes in population.

#### **Cooperative Agricultural Research Center**

External factors that may affect the outcomes of the defined programs include, but may not be limited to competing programmatic challenges, economic challenges, and/or program redirection. Partnerships and/or collaborations with the following agencies, organizations and industries are crucial in accomplishment of the program's activities and goals:

- Cooperative Extension Program at the University.
- Department of Agriculture, Nutrition and Human Ecology at the University.
- Other 1862 and 1890s Land Grant Institutions.
- Texas A&M University and with other Institutions within the System.
- Linkages with Texas Medical Center (Houston, TX), Nanofluence Health Corporation (Northfield, IL), Hibiscus Plantation (Waller, TX), and Alltech Biotechnology Corporation (Lexington, KY).

As new challenges arise and are of immediate urgency, as a part of the food system program commitment to enhancing the quality of life of the underserved populations, the food systems program will address these issues. The defined program will not change unless effective programs have been implemented to alter the need as addressed.

## V(K). Planned Program - Planned Evaluation Studies

### Description of Planned Evaluation Studies

#### **AgriLife Extension**

Surveys, interviews, and monthly reports will generally be used to collect data on the program.

For the Certified Food Manager (CFM) program, we will examine the extent to which participants pass the CFM exam. For those who complete our food handler's course, we will assess knowledge pre and post and calculate change in knowledge as a result of what participants learn in the program.

#### **Cooperative Agricultural Research Center**

The food system program activities will be evaluated during and after program initiation. The progress of each activity will be evaluated annually as a part of the CARC fiscal year annual accomplishment and plan of work. The scientist leading each activity will report specifically on the progress that has been made on that activity. The progress report of the activity will include finished tasks, undone tasks and address problems and solutions with associated activity and a recommendation for continual support of activity. The overall program will be evaluated based upon the stated outputs and outcomes. The use and input of extension personnel, industrial and other partners will help to effectively evaluate and accomplish the activities and goals of the program. The evaluation process will review whether the

facilities and other resources presently at the university are adequate to accomplish the goals.

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

### **Program # 12**

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

Global Food Security and Hunger

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

##### **AgriLife Extension and Cooperative Extension Program**

The Supplemental Nutrition Assistance Program (SNAP -Ed, titled Better Living for Texans), is specifically targeted towards SNAP recipients, applicants, and other approved audiences to help them make better food choices, improve nutrition knowledge, and adopt specific food safety and nutrition behaviors to improve their food security status, improve their health, and reduce out-of-pocket food expenses.

The BLT program supports the AgriLife Extension strategic goal to improve the health, nutrition, safety, and economic security of Texas families.

##### **AgriLife Research**

Research led by the Borlaug Institute for International Agriculture assists developing nations to develop sustainable food production and distribution systems to improve the quantity and quality of food. Both basic and applied research benefit vulnerable populations through breeding improved varieties of crops, breeds of livestock, and development of sustainable production and distribution systems.

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

**4. Program duration :** Medium Term (One to five years)

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

**6. Expending other than formula funds or state-matching funds :** No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	0%	0%	20%	0%
205	Plant Management Systems	0%	0%	20%	0%
211	Insects, Mites, and Other Arthropods Affecting Plants	0%	0%	20%	0%
703	Nutrition Education and Behavior	40%	40%	0%	0%
704	Nutrition and Hunger in the Population	20%	20%	20%	0%
801	Individual and Family Resource Management	40%	40%	20%	0%
	<b>Total</b>	100%	100%	100%	0%

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

1. Situation and priorities

**AgriLife Extension**

In Texas, nearly 18% of households live at or below poverty; an equal percentage have difficulty feeding their families safe and nutritious food at some point during the year (food insecurity). The Supplemental Nutrition Assistance Program-Education (titled Better Living for Texans), is specifically targeted towards SNAP recipients, applicants, and other approved audiences to help them make better food choices, improve nutrition knowledge, and adopt specific food safety and nutrition behaviors to improve their food security status and reduce out-of-pocket food expenses. Because of the high rates of poverty and food insecurity (compared to national averages), this program is critical in the state of Texas. Currently, an estimated 3.5 million Texans receives SNAP benefits.

**AgriLife Research**

Although research results and discoveries may be applied to food and nutrition programs in the U.S., research activities conducted by the Borlaug Institute are primarily applicable to food security and hunger issues facing developing nations in Latin America, Africa, and the Middle East.

**Cooperative Extension Program**

A large number of Texas citizens, whether living in rural or urban areas, socially disadvantaged or middle income are experiencing problems with diet related illnesses. The prevalence of obesity in more than 69% of the adult population and 32% in children and adolescents. Medical cost associated may reach \$147 billion (Institute of Medicine) Among children and adolescents, 15% are overweight and more than 70% have diseases that are associated with obesity such as hypertension and elevated cholesterol levels. In Texas, obesity related diseases including diabetes, hypertension, cancer and heart disease are found in higher rates among various members of racial-ethnic minorities (e.g., African American and Hispanic American).

A majority of the agricultural producers that get assistance from the Cooperative Extension Program are small farmers with less than 50 acres of land. Many of these socially disadvantaged farmers work full time, and the farm is a second source of income. A low-input sustainable agricultural system is needed to assist these producers get optimum production in the most economical manner.

The South lends itself to many sustainable alternatives because of its mild climate and long growing season. Fruit and vegetable crop productions have been suggested as agricultural alternatives that could improve the income situation of small-scale farmers who utilize Cooperative Extension. Many of these individuals are limited resource farmers seeking methods to improve their crop production potential and profitability. Studies have shown that low-input, alternative agriculture using alternative crops and environmentally friendly production practices will enhance productivity without polluting the environment. Variety trials, fertilizer treatments and different cultural practices have been investigated to determine the relationship between plants and growth factors, appropriate crop management practices and pest control. For small livestock producers, sustainable methods are being promoted that will assist these agricultural operations facing problems such as inadequate rotational grazing techniques, poor selection and management of breeding stock, and problems of controlling animal diseases and parasites.

## **2. Scope of the Program**

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

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

### **1. Assumptions made for the Program**

#### **AgriLife Extension and Cooperative Extension Program**

Our ability to deliver this program is contingent on plan approval from USDA/FNS. In addition, our ability to reach the audience is dependent on the approval of waivers from FNS that will allow us to expand our programming to audiences other than those who receive benefits from SNAP (about half of Texans eligible for SNAP benefits actually participate in the program).

#### **AgriLife Research**

Our success in helping to alleviate hunger in our target countries depends to a great extent upon our ability to convince local governments to cooperate with us and to implement programs and policies based upon our research findings.

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

**AgriLife Extension and Cooperative Extension Program** There are five major goals of the Better Living for Texans/Food Stamp Nutrition Education program: (1) improve physical activity (2) By participating in BLT, clients will adopt one or more food resource management skills such as meal planning, comparison shopping, or shopping from a list; (3) By participating in BLT, clients will improve in one or more food safety practice such as proper hand washing, proper storage and thawing of food; (4):By participating in BLT, clients will indicate a reduction in out-of-pocket food expenses; and (5) By participating in BLT, clients will run out of food before the end of the month less often. Another goal of SNAP-Ed is to increase access to healthy food options. In Texas, we are using a community garden approach in targeted counties to meet this goal.

#### **AgriLife Research**

Our ultimate goal is to assist governments in our target audience in their efforts to alleviate hunger and improve the nutrition of their population.

**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
2017	30.0	1.0	2.0	0.0
2018	30.0	1.0	2.0	0.0
2019	30.0	1.0	2.0	0.0
2020	30.0	1.0	2.0	0.0
2021	30.0	1.0	2.0	0.0

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

**1. Activity for the Program**

**AgriLife Extension and Cooperative Extension Program**

Nutrition education will be conducted using a variety of methods including group, individual, media, and newsletters. Group methods will either be single education events that focus on a very specific concept/behavior (e.g. washing fresh produce to reduce the risk of a foodborne illness) or a series of lessons that focus on broader concepts such as label reading or food resource management. Networking with agencies and organizations to expand outreach and identify new audiences will also occur.

Basic gardening programs will be offered to individuals who are interested in learning how to grow their own vegetables and fruits. In three counties, we have developed 18 community gardens that people can work to improve their access to vegetables and fruits. We anticipate expanding the number of gardens slightly and focusing on backyard gardening to help participants reach this goal.

**AgriLife Research**

Research will be conducted in Africa, Latin America and the Middle East in cooperation with the Gates Foundation, Howard G. Buffett Foundation, local extension services, local universities, Texas Department of Agriculture, Department of Defense and USAID. Examples of planned activities include the Texas Israeli Exchange, Iraq Trade and Development, and the Kurdistan Initiative.

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

**Extension**

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> </ul>

**3. Description of targeted audience**

**AgriLife Extension and Cooperative Extension Program**

The target audience for the Better Living for Texans program is SNAP recipients and applicants. However, Texas has been granted waivers by USDA/FNS that allow us to extend our program to other limited resource audiences. These audiences include: women receiving WIC benefits, children attending schools in which 50% or more of the children receive free or reduce meals; children and parents in Head Start programs; individuals receiving food at a food bank or food pantry; children who participate in the Summer Food Service Program; and individuals living in census tracts where 50% or more of the population is at 130% of the poverty level or below.

**AgriLife Research**

Target audiences include the United Nations, governments and non-governmental organizations in Africa, Latin America and the Middle East.

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

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

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

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

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

### **1. Output Measure**

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



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

O. No	Outcome Name
1	Minimum amount of monthly out-of-pocket food expenses reported saved by program participants.
2	# of producers adopting best management practices on sustainable agriculture.
3	# eligible SNAP-ED participants who report an increase in accessibility of fresh fruits and vegetables from community gardens.
4	BLT participants who enroll in Walk Across Texas will increase the number of miles walked by 15% at the end of the 8 week program.
5	The percentage of participants who shop with a list "always" or "sometimes" will increase by 20%.
6	BLT participants will report an increase in vegetable and fruit consumption by at least ½ cup total.

**Outcome # 1**

**1. Outcome Target**

Minimum amount of monthly out-of-pocket food expenses reported saved by program participants.

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

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

- 801 - Individual and Family Resource Management

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

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

# of producers adopting best management practices on sustainable agriculture.

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

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

- 703 - Nutrition Education and Behavior

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

- 1890 Extension

**Outcome # 3**

**1. Outcome Target**

# eligible SNAP-ED participants who report an increase in accessibility of fresh fruits and vegetables from community gardens.

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

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

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 801 - Individual and Family Resource Management

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

- 1862 Extension

#### **Outcome # 4**

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

BLT participants who enroll in Walk Across Texas will increase the number of miles walked by 15% at the end of the 8 week program.

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

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

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population

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

- 1862 Extension

#### **Outcome # 5**

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

The percentage of participants who shop with a list "always" or "sometimes" will increase by 20%.

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

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

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 801 - Individual and Family Resource Management

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

- 1862 Extension

#### **Outcome # 6**

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

BLT participants will report an increase in vegetable and fruit consumption by at least ½ cup total.

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

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

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 801 - Individual and Family Resource Management

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

- 1862 Extension

## **V(J). Planned Program (External Factors)**

### **1. External Factors which may affect Outcomes**

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

#### **Description**

##### **AgriLife Extension and Cooperative Extension Program**

The implementation of the Better Living for Texans program is contingent upon continued funding by USDA/FNS. Because the program is implemented according to the federal guidance plan on SNAP education, any recommended changes in what should be taught in this program will impact our outcomes. Our audience faces many challenges when it comes to adopting nutrition recommendations outlined by the Dietary Guidelines including food insecurity and poverty. Our outcomes are also heavily dependent on the willingness of the target audience to participate in the evaluation of the program. This audience can be a challenge to reach; follow-up surveys have historically been difficult to implement. In addition, unexpected financial challenges such as the loss of income or unforeseen medical expenses may impact a household's food security status.

##### **AgriLife Research**

Some of our research is conducted in dangerous environments where political conflict is endemic. Our target audiences encounter significant challenges in implementing our recommendations and our research findings.

## **V(K). Planned Program - Planned Evaluation Studies**

### **Description of Planned Evaluation Studies**

Evaluation of the program will be accomplished by using a pre, post, and 30-day follow-up survey to gauge the extent that participants adopt selected behaviors by adults who graduate from a series of lessons related to label reading, food safety, and food resource management. Participants will also be

encouraged to enroll in the Walk Across Texas program to help them increase their physical activity.

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

### **Program # 13**

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

Fostering Strong Families

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

##### **AgriLife Extension**

###### **Parenting and Dependent Care**

The Parenting and Dependent Care program will focus on issues related to child care, elder care, and parent-child relationships. Specifically, this multi-faceted program seeks to improve the knowledge and skills of child care providers, professionals and volunteers working with the elderly, and parents through a variety of educational methods including one-on-one instruction, face-to-face conferences/workshops, newsletters, fact sheets, and online courses.

The Parenting and Dependent Care program supports the AgriLife Extension Roadmap goal to improve the health, nutrition, safety, and economic security of Texas families.

###### **Family Financial Management**

Three programs within the family financial security planned program area will be reported: Money Smart, the FDIC-developed curriculum that serves under-banked and less financially sophisticated audiences, Wi\$eUp, the national financial education program developed originally for the U.S. Department of Labor - Women's Bureau by Texas AgriLife Extension that targets Generations X and Y, with special emphasis on women ages 22-35, and Welcome to the Real World, a financial reality simulation exercise for youth audiences.

The Family Financial Management program supports the AgriLife Extension Strategic Plan goal to improve the health, nutrition, safety, and economic security of Texas families.

##### **Cooperative Extension Program**

###### **Bullying Programs**

This program provides educational and technical information to limited resource families to strengthen family systems, increase resiliency, and reduce bullying. This program engages parents and their children in informal learning activities and guidance to access available resources.

###### **Family Financial Management**

This program provides educational and technical information to limited resource families to strengthen family systems and resiliency through information to develop an understanding of how individuals and families obtain and use resources of time, money and human capital to achieve their standard of living and overall quality of life.

###### **Parenting**

If the future of our society is our children, then the key to that future rests primarily with parents and teachers. Parenting, though still one of the most underrated jobs in society, is beginning to attract some of the attention and consideration it deserves. Success at any job first requires a sound understanding of its purpose. The basic purpose of parenting has not changed throughout history. We can state it like this: The purpose of parenting is to protect and prepare our children to survive and thrive in the kind of society in which they live. The Active Parenting curriculum will be used focusing on these three lessons: Chapter 1: Communication and Cooperation; Chapter 2: Discipline and Responsibility; Chapter 3: Power, Courage, and Self-Esteem

**AgriLife Extension and Cooperative Extension Program**

**Passenger Safety Programs**

The Child Passenger Safety Program works to reduce deaths and injuries from motor vehicle crashes by increasing the proper use of child restraints and safety belts. The project's emphasis is increasing the use of child safety seats across Texas.

The Child Passenger Safety program supports the AgriLife Extension Roadmap goal to improve the health, nutrition, safety, and economic security of Texas families.

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

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

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

**6. Expending other than formula funds or state-matching funds :** No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
801	Individual and Family Resource Management	50%	50%	0%	0%
802	Human Development and Family Well-Being	50%	50%	0%	0%
	<b>Total</b>	100%	100%	0%	0%

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

**1. Situation and priorities**

**AgriLife Extension**

**Parenting and Dependent Care Programs**

Changes in family life over the last several decades have influenced the ability of family members to adequately address the needs of children and aging adults. Families need access to research-based educational resources and training programs to assist them in their job of raising responsible citizens. According to recent statistics, over 1/4 of today's children reside in single-parent households where they are much more likely to experience poverty. Nearly 5 million infants, young children, and teens live in households headed by a grandparent. Over 20 million children are currently living apart from their biological fathers. Researchers have found that children who grow up with absent fathers are at a greater risk to a host of negative outcomes (e.g., poverty, school failure, child abuse, suicide, criminal behavior, early sexual activity, and drug and alcohol abuse). These risks diminish substantially when children grow up with an active and loving father in the home.

Child maltreatment rates in the U.S. remain extremely high. In 2011, 3.4 million referrals of abuse or neglect, involving 6.2 million children, were received by Child Protective Services (U.S. Department of Health and Human Services, 2012). More than 80% of substantiated child maltreatment cases occurred at

the hands of a parent or parents. Parenting programs that provide education and skills training to parents covering a variety of topics (e.g., child development, communication, nutrition, health and safety, etc.) have been demonstrated to be effective in reducing child maltreatment rates.

As families have changed over the last several decades, so has the demand for quality child care. Sixty-seven percent of children under age 5 receive some form of child care on a regular basis from persons other than their parents (Child Care Aware, 2012). The Texas Workforce Commission (TWC) estimates that there are over 100,000 child care providers caring for more than 760,000 children under the age of 13 in licensed or regulated child care facilities in the state of Texas (TWC, 2003). Having a well-trained child care workforce is essential to providing the high quality child care that children need to develop physically, socially, emotionally, and cognitively. Texas has the 5th largest population of older adults in the U.S. Many elderly are unable to care for themselves due to illness or age-related disabilities (e.g., Alzheimer's Disease) and, therefore, rely upon family members, volunteers, and eldercare professionals to provide information, resources, and day-to-day care and support.

#### Family Financial Management Programs

The mission statement of the FY11 - F15 Texas AgriLife Strategic Plan is "improving the lives of people, businesses, and communities across Texas and beyond through high-quality, relevant education." The vision is "to be the premier provider of relevant continuing education, developed through grassroots issue identification, with stakeholder involvement in planning and delivery." One major imperative of the Strategic Plan is to improve the health, nutrition, safety, and economic security of Texas families. One of the goals is helping families and individuals management their resources and two of the specific strategies are to continue to provide outreach education through the Money Smart Program and Wi\$eUp - Financial Planning for Generation X and Y Women. An additional strategy is Welcome to the Real World, a hands-on financial simulation exercise developed for a youth audience and intended as a capstone experience for youth who are learning about financial education. Personal financial literacy is required in Texas as a condition of graduation from high school. In 2011, Texas AgriLife Extension conducted an issue identification process with direction from the Leadership Advisory Boards in each county involved 5,639 community leaders in face-to-face forums and an additional 3,382 who provided web-based input. Of the 14 issues related to families and health, family financial management was identified as the second most frequently identified issue, thus providing direction for future educational programming.

#### **Cooperative Extension Program**

##### Bullying Efforts

Families face critical challenges and issues from economic, both parents in the work place, teenage pregnancies, increasing violence against youth, increased single-parent families, and educational and societal influences. Regardless of resources, families want to spend and save wisely, rear children to be productive citizens, and demonstrate positive family and community changes.

##### Family Financial Management Programs

Families face critical challenges and issues from economic, both parents in the work place, teenage pregnancies, increasing violence against youth, increased single-parent families, and educational and societal influences. Regardless of resources, families want to spend and save wisely, rear children to be productive citizens, and demonstrate positive family and community changes.

Over the past three years bankruptcy in Texas is increasing. Approximately 12% of local households reported annual income of less than \$15,000. To avoid financial crisis and obtain satisfaction from income, individuals and families must have a tailored money management plan. Strong families are the foundation for quality communities and a nation with a positive future.

#### **AgriLife Extension and Cooperative Extension Program**

##### Passenger Safety Programs



Traffic crashes are the leading cause of death for children ages 3 and up. Although safety belts and child restraints are the single-most effective tool in reducing these deaths and injuries, nationally more than half of children killed in vehicle crashes are unrestrained. Minority children are at a greater risk of being unrestrained. Studies show that 73 percent of child safety seats are used incorrectly. To date, this project has inspected over 12,795 child safety seats, seeing a misuse rate of 99 percent.

## **2. Scope of the Program**

- In-State Extension
- Multistate Extension

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

### **1. Assumptions made for the Program**

#### **AgriLife Extension**

##### Parenting and Dependent Care Programs

The quality of care that children and aging adults receive has a direct impact on their quality of life. Child care providers, eldercare volunteers and professionals, and parents can improve the quality of care that they provide for children and adults by improving their knowledge and skills in each of these areas through educational opportunities that allow them to apply the information they have learned in practical settings. The Dependent Care and Parenting Program equips parents, volunteers, and professionals with the knowledge and skills they need to provide the best possible care to children and aging adults. In addition, child care and elder care professionals are required by the state of Texas to obtain clock hour credits and continuing education units to fulfill annual training requirements. The Dependent Care and Parenting Program provides a valuable resource to professionals to help them obtain the training they need to remain employed in their respective professions.

##### Family Financial Management Programs

Numerous studies and datasets document inadequate levels of financial literacy/financial capability - the knowledge and practices among youth and adults in the U.S. that enhance economic well-being. Especially significant are the concerns for future retirement security when people are unable or unwilling to save, or are unaware of future consequences. Needs are especially important for certain sub-groups of the population - "unbanked" consumers, women, and youth. The logic model implicit in financial education initiatives is based on changes in awareness, knowledge, propensity or intent to change behavior, and adoption of certain behaviors/practices. Ultimate program impacts, when possible, are expressed in dollar values, in order to provide an economic basis for the value or relevance of the programs conducted.

#### **Cooperative Extension Program**

It is assumed that extension staff will plan and implement educational programs to meet the diverse needs of families and staff will continue to network with local agencies and organizations to present money management and parenting education using a variety of teaching methods.

It is assumed that the Outcome and Output plans and logic model concept will produce results for youth and adults engaged.

#### **AgriLife Extension and Cooperative Extension Program**

##### Passenger Safety Programs

Proper use of child restraints reduces the risk of fatal injury in motor vehicle crashes.

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

**AgriLife Extension**

Parenting and Dependent Care Programs

The primary goals of the Dependent Care and Parenting Program include:

1. To provide research-based information, resources, and programs to child care providers, elder care professionals and volunteers, and parents.
2. To improve the knowledge and skills of child care and eldercare professionals and parents so that they can provide quality of care for those they work with (e.g., children and aging adults).
3. To help child care and eldercare professionals obtain state-mandated clock hour credits and continuing education units.

Family Financial Management Programs

The primary goals of Family Financial Management Programs include:

1. To provide research-based information, resources, and educational programs to youth and adult audiences that will enable them to make financial decisions congruent with their needs and goals.
2. To improve the financial awareness, knowledge, and skills of unbanked adults, women, and youth, as well as other audiences.
3. To introduce strategies that enable consumers to increase savings and/or reduce debt.

**Cooperative Extension Program**

Bullying Programs

Families will enhance communication and parents will be empowered with information to access community and other resources needed to enhance their family infrastructure.

Family Financial Management Programs

The goals of this program are to: provide limited resource families with relevant financial information to develop skills in budgeting, savings and investing. Families will enhance communication and parents will be empowered with information to access community and other resources needed to enhance their family infrastructure.

**AgriLife Extension and Cooperative Extension Program**

Passenger Safety Programs

Reduce deaths and injuries to children in motor vehicle crashes.

**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
2017	15.0	8.5	0.0	0.0
2018	20.0	8.5	0.0	0.0
2019	20.0	8.5	0.0	0.0
2020	20.0	8.5	0.0	0.0

2021	20.0	8.5	0.0	0.0
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**V(F). Planned Program (Activity)**

**1. Activity for the Program**

**AgriLife Extension**

Parenting and Dependent Care Programs

AgriLife Extension's Family Development and Resource Management Unit is committed to providing educational programs to support and strengthen Texas families. In the areas of parenting, child care, and dependent care, Extension offers a wide range of programs and resources to citizens across the state. Programs and resources include train-the-trainer workshops for professionals and volunteers, multi-session parent education workshops, 1-2 hour lectures, distance education workshops, self-study child care training guides, internet resources (e.g., online child care courses, fact sheets, research briefs, trend data, links to websites), and newsletters.

Family Financial Management Programs

Implement the Money Smart Financial Education Curriculum.  
 Implement the Wi\$e Financial Planning for Generation X and Y Curriculum  
 Implement the Welcome to the Real World Financial Simulation Activity

**Cooperative Extension Program**

Provide one-on-one consultations  
 Conduct educational programs and classes  
 Exhibit educational displays at various sites  
 Use E-Bus to conduct education programs in counties

**AgriLife Extension and Cooperative Extension Program**

Passenger Safety Programs

County Extension agents and law enforcement officers trained and certified as child passenger safety technicians will conduct child safety seat checkup events in under-served rural areas of Texas. In addition, child safety seat fitting stations have been established at county Extension offices and fire/EMS departments to allow families additional access to certified technicians. When needed, a replacement seat is issued at no charge to parents and caregivers at checkup events and fitting stations.

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

**Extension**

<b>Direct Methods</b>	<b>Indirect Methods</b>
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Other 1 (Web-Based Courses)</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites other than eXtension</li> </ul>

**3. Description of targeted audience**

### **AgriLife Extension**

#### **Parenting and Dependent Care Programs**

Target audiences for child care programming include adults and teens providing care for preschool and school-age children in family, center and school-aged settings. Target dependent care audiences include adults and teens providing care for adults and children who are unable to provide some portion of care for themselves due to illness or age-related disabilities. Programs and resources are accessible to target audiences regardless of gender, marital status, family status, race/ethnicity, income level, or educational level. It is estimated that 70% of this audience falls under the category of "low-income."

#### **Family Financial Management Programs**

Money Smart: unbanked, less financially-sophisticated consumers.

Wi\$eUp: Generations X and Y, with emphasis on women ages 22-35.

Welcome to the Real World Financial Simulation: high school age youth.

### **Cooperative Extension Program**

Minority families and individuals

Senior adults

Single parents

Limited resource families

College students

Individuals who have experienced job loss

Teen parents

### **AgriLife Extension and Cooperative Extension Program**

#### **Passenger Safety Programs**

Under-served residents of rural areas in Texas.

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

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

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

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

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

### **1. Output Measure**

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

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

O. No	Outcome Name
1	Percentage of child care providers who increase their knowledge of child care best practices as a result of participating in child care provider training's.
2	Percentage of dependent care providers who increase their knowledge of dependent care best practices as a result of participating in depend care training's.
3	Percentage of parents who increase their knowledge of parenting practices as a result of attending parenting training's.
4	Percentage of fathers (father-figures) who increase the amount of time spent reading to their children.
5	Number of participants who increase knowledge on financial management.
6	Number of participants who reduced debt and increased savings.
7	Number of limited resource clientele who gained knowledge about improving their financial stability by reducing debt and increasing savings.
8	Number of car seats incorrectly installed on arrival and number installed correctly after instruction and/or new seat.
9	Number of car seats recommended for replacement for any reason.

**Outcome # 1**

**1. Outcome Target**

Percentage of child care providers who increase their knowledge of child care best practices as a result of participating in child care provider training's.

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

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

- 802 - Human Development and Family Well-Being

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

- 1862 Extension
- 1890 Extension

**Outcome # 2**

**1. Outcome Target**

Percentage of dependent care providers who increase their knowledge of dependent care best practices as a result of participating in depend care training's.

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

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

- 802 - Human Development and Family Well-Being

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

- 1862 Extension
- 1890 Extension

**Outcome # 3**

**1. Outcome Target**

Percentage of parents who increase their knowledge of parenting practices as a result of attending parenting training's.

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

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

- 802 - Human Development and Family Well-Being

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

- 1862 Extension
- 1890 Extension

#### **Outcome # 4**

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

Percentage of fathers (father-figures) who increase the amount of time spent reading to their children.

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

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

- 802 - Human Development and Family Well-Being

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

- 1862 Extension

#### **Outcome # 5**

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

Number of participants who increase knowledge on financial management.

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

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

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

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

- 1862 Extension
- 1890 Extension

#### **Outcome # 6**

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

Number of participants who reduced debt and increased savings.



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

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

- 802 - Human Development and Family Well-Being

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

- 1862 Extension

**Outcome # 7**

**1. Outcome Target**

Number of limited resource clientele who gained knowledge about improving their financial stability by reducing debt and increasing savings.

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

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

- 801 - Individual and Family Resource Management

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

- 1890 Extension

**Outcome # 8**

**1. Outcome Target**

Number of car seats incorrectly installed on arrival and number installed correctly after instruction and/or new seat.

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

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

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

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

- 1862 Extension
- 1890 Extension

## **Outcome # 9**

### **1. Outcome Target**

Number of car seats recommended for replacement for any reason.

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

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

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

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

- 1862 Extension
- 1890 Extension

## **V(J). Planned Program (External Factors)**

### **1. External Factors which may affect Outcomes**

- Appropriations changes
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

#### **Description**

##### Parenting and Dependent Care Programs

Numerous factors could potentially influence the expected outcomes from the Dependent Care and Parenting Program. Adequate funding is needed to support the overall program. If funding is decreased (due to appropriation changes) the program would have to be reduced in size and scope. If funding is increased, the program could be expanded to reach a broader audience across the state of Texas. Public priorities change over time and this could impact the specific issues that are addressed by the program. Finally, demographic changes in the state of Texas could impact how programs are delivered (e.g., need for culturally appropriate training, Spanish language resources, etc.).

##### Family Financial Management Programs

Continued economic uncertainty at all levels (local, state, national and global) is likely to increase demand for programming on financial topics. Financial security concerns of individuals and families may increase, especially for future retirement income security and for the cost of higher education, resulting in a re-direction of some family financial security information and education. Educational requirements for personal finance education as a requirement of high school graduation in Texas and a new requirement for K-8 financial education may increase involvement with local educational authorities.

Competing public priorities and programmatic challenges will influence the extent to which viable program offerings can be made available by Extension.

The 2010 Census results for Texas reveal a larger growing population - demographic changes will drive how Extension programming will reach audiences needing to increase financial knowledge and skills.

Passenger Safety Programs

Any of the above factors could increase or decrease the output numbers identified. This is a project funded by the Texas Department of Transportation and without continued funding, the project could not continue, for example.

**V(K). Planned Program - Planned Evaluation Studies**

**Description of Planned Evaluation Studies**

The common strategies employed for evaluation studies involve the use of both pre/post and retrospective studies, and follow-up studies. Use of these strategies will be contingent upon the type of data to be collected and the target audience. The number of child safety seats properly installed at the beginning of the checkup event or when coming to a fitting station will be used to determine the percentage of seats being used properly by participating families.

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

### **Program # 14**

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

Life Skills for Youth (includes Character Education and Leadership)

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

##### **AgriLife Extension**

The Life Skills for Youth program will focus on enhancing the skills needed for youth to become productive adults. Specifically, this program will serve to highlight the work in Texas associated with project experiences including club projects, curriculum enrichment, and special interests. These areas are represented by various subject areas including but not limited to agricultural, human health, workforce development and other less historic projects such as photography, computers, etc.

The Life Skills for Youth program supports the AgriLife Extension Roadmap goal to prepare Texas youth to be productive, positive, and equipped with life skills for the future.

##### **Cooperative Extension Program**

The program provides outreach and non-formal education to limited resource youth in thirty-six rural and urban Texas counties based on county identified issues, Cooperative Extension Program and 4-H mission mandates, as well as federal goals. According to a 4-H National Headquarters Fact Sheet (2011), 4-H exists to provide meaningful opportunities for youth and adults to work together to create sustainable community change. This youth development framework focuses on providing learning environments that foster a sense of belonging while facilitating mastery, independence, and generosity. These concepts are found in the Eight Essential Elements identified as critical to 4-H program success (National 4-H Council, 2009). This is accomplished within three primary content areas-healthy living, science, and leadership or citizenship.

Healthy living has been addressed by 4-H since 1902. The 4-H Healthy Living engages youth and families through access and opportunities to achieve optimal physical, social, and emotional well-being. The core areas of healthy living are nutrition, fitness, social-emotional health, injury and substance abuse prevention (National 4-H Headquarters Fact Sheet, 2011).

4-H programs prepare youth for the challenges of the 21st century by engaging them in a process of science discovery and exploration. The core areas of science are animal science, agriculture, applied mathematics, consumer science, engineering, environmental science, natural resources, life science, and technology (National 4-H Headquarters Fact Sheet, 2011).

Life skills have been identified as a key resource for the positive, productive development of youth because it addresses what they must have to function well in society as they find it. Life skills address what young people must have to function well in society as they find it. In The Jacobs Foundation Guideline on Monitoring and Evaluating Life Skills for Youth Development (2011), life skills is presented as a set of core adaptive and positive attitudes, knowledge, and behaviors that enable young people to navigate the societal challenges encountered in everyday living and deal adequately with developmental tasks. According to UNICEF (2002), they can be applied to actions directed at the self, other people, or the local environment. So they are important for helping youth shape the world and not just cope with it. They empower youth to take steps that promote health, positive social relationships, and contribute to society. The core areas of life skills are social and interpersonal skills, cognitive skills, emotional coping skills, life leadership skills, technical skills, livelihood skills, civic engagement, and service.

- 3. Program existence : Mature (More than five years)
- 4. Program duration : Long-Term (More than five years)
- 5. Expending formula funds or state-matching funds : Yes
- 6. Expending other than formula funds or state-matching funds : No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
802	Human Development and Family Well-Being	0%	40%	0%	0%
806	Youth Development	100%	60%	0%	0%
	<b>Total</b>	100%	100%	0%	0%

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

**1. Situation and priorities**

**AgriLife Extension**

Youth issues were identified by Texas residents as a high priority for Extension programming. In Texas there are approximately 4 million school-aged youth. Texas 4-H currently enrolls 25% of these youth through various programs.

Nationally, youth related issues include Weight Management, Harmful Substance Abuse, Teen Sexuality, Accepting and Respecting Others, Youth Violence, Unsupervised Time, Youth Literacy, and Death by Accident. During 2004, Texas Counties identified a number of youth related issues which strongly parallel national concerns.

Texas 4-H offers nine areas of program delivery to meet the needs of a diverse state with complex issues. A comprehensive urban plan includes faculty from the 20 most populated Texas counties who work cooperatively toward a consistent program directed to serve the needs of urban youth. Furthermore, focused efforts are directed toward traditionally under-served clientele and accommodations were made to meet the needs of the disadvantaged.

**Cooperative Extension Program**

These national issues disproportionately affect limited-resource and/or minority youth and their families: global food security, childhood obesity, climate change and sustainable energy. Many limited-resource communities are vulnerable to food security issues and have been identified as "food deserts." Food deserts offer limited access to fresh food and vegetables and are usually accompanied by equally limited access to safe outdoor space and transportation. These circumstances combined lead to racial and income level disparities in childhood obesity which affects 17% (or 2.5 million) of children and youth in the United States according to the Centers for Disease Control and Prevention (15-20% in Texas). These food systems, and therefore these communities, become more vulnerable due to climate change. Climate

change has unique impacts on local plants, animals, and people in addition to weather patterns and conditions. Texas has a number of densely populated coastal communities and economies that depend on or support them. The effects of climate change on the environment and soaring energy costs has led to a national quest for sustainable and alternative energy sources. Consequently, employment trends in the 21st century are in science, technology, engineering, and math (STEM) careers and green jobs as indicated by the Workforce Investment Act. Unfortunately, findings from the first report of the STEM Workforce Data Project confirm that there have persistently not been enough people to fill these positions in the United States, called the "skill gap" or broken "worker pipeline." Their third report indicates there have been limited improvements in the last decade in the inclusion of minorities in STEM occupations. Youth, particularly those who are minority and/or in limited-resourced communities, have not been adequately exposed and equipped to fill that gap and that is reflected in the extremely low employment rates.

The vision of 4H includes youth who can not only navigate change, but also are a catalyst for it. Youth development is about helping youth navigate challenges of daily life and developmental tasks to become productive adults and contributing members of society through science exploration and discovery, healthy lifestyle promotion, and life skills development. The healthy living program addressed local and national concerns regarding childhood obesity, climate change, global food security & hunger, and bullying. The science exploration program addresses local and national concerns regarding sustainable energy, climate change, the underrepresentation of minorities in science, and preparation of youth for the world of work. Life skills address local and national concerns regarding climate change, childhood obesity, bullying, workforce preparation, and global food security and hunger.

## **2. Scope of the Program**

- In-State Extension
- Multistate Extension

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

### **1. Assumptions made for the Program**

#### **AgriLife Extension**

One major assumption in Texas regarding the 4-H program is that each of the 254 counties in the state will offer 4-H to the youth in that county. Faculty (agents and specialists) are held accountable for providing 4-H programs state-wide and this is documented through program plans and accountability systems. Each county must also have a youth board to identify and address issues of importance in that county.

This program also assumes that youth are willing to participate in 4-H and that each youth who enters the program will be involved in at least one project experience. This program also assumes that each project experience has a minimum of five learning experiences that are a minimum of 30 minutes in duration each.

#### **Cooperative Extension Program**

If Extension staff and volunteers are adequately trained to execute the logic model and incorporate the essential elements, then they can provide optimal youth development contexts for non-formal and experiential learning in healthy living, science, and life skills. If youth participate in optimal youth development context for non-formal and experiential learning in healthy living, science, and life skills, then they will demonstrate knowledge and behavior changes in those areas. If youth demonstrate short and

medium term knowledge and behavior changes, then the program will eventually make a long-term impact on societal conditions.

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

**AgriLife Extension**

The goal for the Life Skills for Youth program is a confident, well educated child who is productive in society.

**Cooperative Extension Program**

Limited resource Texas youth will experience cognitive and behavioral skills development through the science, engineering and technology program. Youth will possess skills needed to compete in a diverse and demanding workforce. Youth will apply knowledge and skills to foster positive lifestyle choices through healthy lifestyle outreach programs.

**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
2017	100.0	10.0	0.0	0.0
2018	100.0	10.0	0.0	0.0
2019	100.0	10.0	0.0	0.0
2020	100.0	10.0	0.0	0.0
2021	100.0	10.0	0.0	0.0

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

**1. Activity for the Program**

**AgriLife Extension**

This program is based on five learning experiences, of a minimum of 30 minutes each, tied to the work of the project for which they participate. Each project is experientially focused. Examples of activities include workshops, demonstrations, and hands-on experiences.

Numerous materials and support is provided by the Texas 4-H faculty to agents and specialists. These items are used for implementation of projects and for professional development of staff. Use of volunteers is significant in enhancing and extending efforts to reach and provide youth with positive experiences.

**Cooperative Extension Program**

4-H Youth development takes place in 36 Texas counties facilitated by Extension Agents with the Cooperative Extension Program in partnership with community volunteers and agencies. There are outreach activities such as speeches, presentations, experiments on wind energy and water conservation as well as literature dissemination at local health fairs and other community events. There are demonstrations and educational enrichment provided to youth in schools and afterschool programs in life

skills, healthy living, workforce development, and science exploration and discovery. There are community clubs that develop and promote life leadership skills and service to others in a context with caring adults. There are special interest project clubs in areas such as gardening and robotics. Youth maintain record books and practice in order to participate in contests such as food shows, soil judging, public speaking, and livestock shows on the county, district, state, and national levels. Special events like camps, conferences, and project-oriented days are also sponsored. Local Extension websites, blogs, and Facebook will be used to promote and highlight program successes.

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

**Extension**

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

**3. Description of targeted audience**

**AgriLife Extension**

All youth of 4-H age are targeted for programs depending on location, issues identified by the local communities, and programs of interest.

**Cooperative Extension Program**

Limited-resource youth, ages 5-19, and caring adults in urban and rural communities of 36 Texas counties throughout the State will be targeted for this program. Special recruitment efforts will be marketed to parents, adults and other agencies for support and collaboration to meet expected goals.



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

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

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

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

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

### **1. Output Measure**

- # of group educational sessions conducted.
  - # of youth that participate in educational activities and programs.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

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

O. No	Outcome Name
1	% of youth who increase knowledge of life skills concepts and practices.
2	% of youth who report they have adopted life skills concepts and practices.
3	% of youth who plan to pursue higher education interest or career interest as a result of their project work.
4	% of youth who report abilities (skills) changed as a result of participation in character education programs.
5	% of 4-H club participants increasing knowledge of leadership skills.
6	% of 4-H club participants applying leadership skills.
7	% increase in limited resource youth more likely to pursue enrollment in post-secondary education.
8	% of limited resource youth aware of or interested in pursuing entrepreneurship, green jobs, and/or STEM careers
9	% of limited resource youth improving science skills.
10	% of limited resource youth adopting behaviors that lead to a healthy lifestyle.
11	% of 4-H club participants increasing knowledge in healthy living
12	% of 4-H club participants changing behaviors for healthier living
13	% of limited resource youth applying citizenship (leadership or services) skills

**Outcome # 1**

**1. Outcome Target**

% of youth who increase knowledge of life skills concepts and practices.

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

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

- 806 - Youth Development

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

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

% of youth who report they have adopted life skills concepts and practices.

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

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

- 806 - Youth Development

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

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

% of youth who plan to pursue higher education interest or career interest as a result of their project work.

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

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

- 806 - Youth Development

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

- 1862 Extension

**Outcome # 4**

**1. Outcome Target**

% of youth who report abilities (skills) changed as a result of participation in character education programs.

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

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

- 806 - Youth Development

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

- 1862 Extension

**Outcome # 5**

**1. Outcome Target**

% of 4-H club participants increasing knowledge of leadership skills.

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

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

- 806 - Youth Development

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

- 1862 Extension

**Outcome # 6**

**1. Outcome Target**

% of 4-H club participants applying leadership skills.

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

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

- 806 - Youth Development

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

- 1862 Extension

**Outcome # 7**

**1. Outcome Target**

% increase in limited resource youth more likely to pursue enrollment in post-secondary education.

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

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

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

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

- 1890 Extension

**Outcome # 8**

**1. Outcome Target**

% of limited resource youth aware of or interested in pursuing entrepreneurship, green jobs, and/or STEM careers

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

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

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

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

- 1890 Extension

**Outcome # 9**

**1. Outcome Target**

% of limited resource youth improving science skills.

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

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

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

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

- 1890 Extension

**Outcome # 10**

**1. Outcome Target**

% of limited resource youth adopting behaviors that lead to a healthy lifestyle.

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

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

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

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

- 1890 Extension

**Outcome # 11**

**1. Outcome Target**

% of 4-H club participants increasing knowledge in healthy living

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

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

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

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

- 1862 Extension

**Outcome # 12**

**1. Outcome Target**

% of 4-H club participants changing behaviors for healthier living

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

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

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

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

- 1862 Extension

**Outcome # 13**

**1. Outcome Target**

% of limited resource youth applying citizenship (leadership or services) skills

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

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

- 806 - Youth Development

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

- 1890 Extension

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

- Appropriations changes
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

**Description**

As with other programs, external factors could either inhibit or enhance the outcomes of the efforts of the Life Skills for Youth program. Changes in funding could increase or limit our efforts depending on an increase or decrease in available monies.

Emerging issues and changes in priorities for current programs could also have an impact on the success of this program. It is believed that the broad scope of the Texas 4-H program and the historic priority placed on youth programs by society will limit these factors.

Finally, the demographics of Texas are rapidly changing and these changes will likely affect how Texas 4-H recruits and retains youth in our program.

## **V(K). Planned Program - Planned Evaluation Studies**

### **Description of Planned Evaluation Studies**

The common strategies employed for evaluation studies involve the use of both pre/post and retrospective studies. Use of these strategies will be contingent upon the type of data to be collected and the target audience.

Evaluation instruments are based on logic models and designed in a collaborative effort by Agents and Specialists along with Program Directors and Evaluation Specialists. They are administered by Staff and/or trained volunteers to the participants immediately following the event or educational series. Demographic, satisfaction, and knowledge and/or behavior change data is collected. The forms are electronically scanned and data reports compiled.



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

### **Program # 15**

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

Adult Leadership and Volunteer Development

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

##### **AgriLife Extension**

Volunteers are one of the most important commodities to Texas Extension. They are important in ensuring that Texas Extension maintains relevance; they help the agency deliver programs, and provide interpretation support to name a few. Mobilizing and organizing a strong volunteer base is essential to the mission of Texas Extension. Texas Extension has the largest volunteer program of any agency in Texas. But with increasing competition for resources, funding, staff and time, sound decisions regarding volunteer recruitment, management, supervision, and administration will be crucial to sustaining current programs, partnerships and developing new opportunities.

The Leadership and Volunteer Development program supports the AgriLife Extension Roadmap goal to prepare Texas youth to be productive, positive, and equipped with life skills for the future.

##### **Cooperative Extension Program**

Volunteers are important to all Extension programs, especially as it relates to providing direction and supporting program areas through committee work and advisory capacities. The 4-H model, in particular, uses volunteers as the core component of program delivery to youth. Limited resource communities are challenged by this volunteer-driven delivery system due to Extension staff deficiencies in volunteer administration and historically low parental involvement. Dr. Barry Boyd (2004) in an article published by the Journal of Extension confirmed with data from the national Delphi study that "faculty, in their role as administrators of volunteers, often lack the competencies to fully manage and utilize this tremendous resource". CEP will help faculty (Specialists and Agents) acquire the 33 competencies identified by Dr. Body. In addition, CEP will provide volunteers training in leadership, civic engagement, and service-learning. CEP will also conduct subject matter workshops for volunteers, including those that contribute to certification and continuing education programs.

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

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

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

**6. Expending other than formula funds or state-matching funds :** No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	40%	40%	0%	0%
806	Youth Development	60%	60%	0%	0%
	<b>Total</b>	100%	100%	0%	0%

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

**1. Situation and priorities**

All research concerning agencies of the future leads us to know that expanding the outreach and programming components through all volunteer efforts is essential. Volunteers are the real heart and hands of many different Extension programs, extending the reach into every community and every neighborhood in Texas. Extension volunteers help people to gain knowledge and skills that will benefit them for life. And, in return, volunteers have the satisfaction of knowing they're making a difference for their friends and neighbors. Much of the work Extension volunteers do grows out of their interests and experiences, but they also receive training from educators from various disciplines. Thus volunteers improve their own skills while helping others.

**2. Scope of the Program**

- In-State Extension
- Multistate Extension

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

**1. Assumptions made for the Program**

**AgriLife Extension**

\* Texas counties (254) will incorporate a volunteer based Extension program.

\* Communities will recognize the importance of developing leadership skills of people in the population thus resulting in volunteer and civic involvement.

\* County Extension faculty readily understand the grass roots mission by developing competencies to implement and manage volunteers.

**Cooperative Extension Program**

If Extension invests additional resources in training for those in need of more professional skills (Extension faculty, young professionals, unemployed, educators, students), then they will provide valuable service hours and innovative solutions to underserved communities through non-formal educational programming. If trained individuals in need of more professional skills engage underserved communities through quality service-learning opportunities, then they will value service and develop life skills (including leadership and livelihood skills) that prepare them for the world of work. If those trained individuals in need of more

professional skills value service and are equipped with the life skills (including leadership and livelihood skills) necessary for the 21st century workforce, then they will continue to promote healthy living and use STEAM career paths to address societal issues from their respective disciplines.

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

**AgriLife Extension**

Develop a volunteer system in AgriLife Extension that adheres to our "grass roots" mission by developing competencies of County Extension Agents so that they can effectively manage volunteers to maximize our ability to provide excellence in educational programs.

Youth will become engaged in community problem solving via governance and partnership with adults in community organizations and agencies.

**Cooperative Extension Program**

- Increased extension of university knowledge and resources
- Strengthen the nation's professional workforce
- Innovative solutions to societal problems
- Expand extension support system
- Enhance the quality extension services to underserved youth and communities

**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
2017	20.0	11.0	0.0	0.0
2018	20.0	11.0	0.0	0.0
2019	20.0	11.0	0.0	0.0
2020	20.0	11.0	0.0	0.0
2021	20.0	11.0	0.0	0.0

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

**1. Activity for the Program**

**AgriLife Extension**

The following activities will be used to implement this program:

\*Provide training for Extension professionals on the ISOTURE volunteer management model and key

concepts related to volunteer administration.

\*Provide training and guidance to Extension specialists in the role and support of program development related to volunteerism.

\*Provide orientation and training directly to volunteers in preparation for their service resulting in a positive experience.

**Cooperative Extension Program**

- Provide one-on-one consultations
- Conduct educational programs and classes
- Exhibit educational displays at various sites
- Use E-Bus to conduct education programs in counties

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

**Extension**

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

**3. Description of targeted audience**

**AgriLife Extension**

The following groups are included in the target audience for this program:

- \* Youth and adult volunteers who have a need or interest in a Texas Extension program.
- \* Extension educators
- \* Youth and adults who have an interest in community development and partnerships.

**Cooperative Extension Program**

The target audience includes partnering with underserved youth, families, and community organizations to recruit and train volunteers. One recent challenge posed by NIFA's Director of Youth & 4-H has been to combine professional and volunteer development. Additional audiences that will be targeted include Extension faculty, young professionals, students, and the unemployed who may be limited-resourced or commit to serve those who are.

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

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

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

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

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

#### **1. Output Measure**

- # group educational sessions conducted.
- # of volunteers and staff that participate in professional /volunteer leadership development and service-learning.
- # of community service and service-learning hours provided by volunteers and participants.
- # service or volunteer hours.

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

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

O. No	Outcome Name
1	% of participants who report an increased knowledge of leadership development practices.
2	% of participants who plan to or adopt leadership development practices.
3	% positive attitude toward serving others as volunteers.

**Outcome # 1**

**1. Outcome Target**

% of participants who report an increased knowledge of leadership development practices.

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

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

- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 806 - Youth Development

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

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

% of participants who plan to or adopt leadership development practices.

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

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

- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 806 - Youth Development

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

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

% positive attitude toward serving others as volunteers.

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

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

- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 806 - Youth Development

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

- 1890 Extension

### **V(J). Planned Program (External Factors)**

#### **1. External Factors which may affect Outcomes**

- Economy
- Appropriations changes
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

#### **Description**

The following are external factors that could affect this program:

\*Changes in funding could increase or limit efforts depending on available monies.

\*Emerging issues and changes in priorities for current programs could also have an impact on the success of this program.

The changing demographics of Texas could influence and change the targeted audience.

### **V(K). Planned Program - Planned Evaluation Studies**

#### **Description of Planned Evaluation Studies**

The common strategies employed for evaluation studies involve the use of both pre/post and retrospective studies. Use of these strategies will be contingent upon the type of data to be collected and the target audience.