

February 28, 2001

Dr. George Cooper
Deputy Administrator, Partnership
CSREES/USDA
Washington, D.C. 20250

Dear Dr. Cooper,

Enclosed please find the FY2000 Annual Report of Accomplishments and Results for Florida A&M University.

This is a joint report for research and extension programs at the University. A letter of authorization has been sent to you recently through the mail. A copy of the letter is enclosed for your information.

If additional information is needed, please contact me.

Sincerely,

Sunil K. Pancholy

Sunil K. Pancholy
Associate Dean for Research

Enclosure

/dh

February 26, 2001

Dr. George Cooper
Deputy Administrator, Partnerships
Cooperative State Research, Education, and Extension Services
U.S. Department of Agriculture
Washington, D.C. 20250

Dear Dr. Cooper:

This is to inform you that Florida A&M University Research and Extension Programs will submit the first Annual Report of Accomplishments and Results electronically.

As the Research Director and the Extension Administrator at the University, I am authorizing transmittal of the said report in electronic format.

If there are any questions, please feel free to contact me.

Sincerely,

Bobby R. Phills

Bobby R. Phills
Dean and Director
Landgrant Programs

BRP/lc

FY2000 Annual Report of Accomplishments and Results Florida A&M University

Florida A&M University, an 1890 Land-Grant Institution, receives Federal research and extension funds under sections 1444 (1890 Extension) and 1445 (1890 Research) of the National Agriculture Research, Extension, and Teaching Policy Act of 1977 as amended.

Section 202 and 225 of the Agricultural Research, Extension, and Education Reform Act of 1998 required Florida A&M University to prepare, submit and have approved a Plan of Work (POW) to receive its formula funds for research and extension programs.

To meet the requirements of this congressional legislation, Florida A&M University submitted a joint research and extension POW in 1999 which was approved by CSREES for a period of five years (10/1/99 - 9/30/2004).

This document reports accomplishments and results for FY2000 (10/1/99 - 9/30/2001).

Planned Programs:

The research and extension programs at Florida A&M University jointly planned and implemented various programs in FY1999-2000. Four national goals were addressed through the programs. Efforts were made to integrate all college activities to address the critical issues in food and agriculture in the state. The College was restructured to reflect the true landgrant functions of teaching, research and extension. The program areas for FY1999-2000 were as follows:

Goal 1

Program Area

1. Statewide Goat Program
2. Viticulture
3. Diversified/Alternative Agriculture

Goal 2

Program Area

None

Goal 3

Program Area

4. Nutrition, Diet and Health in Florida

Goal 4

Program Area

5. Water Quality and the Environment
6. Biological Control

Goal 5

Program Area

7. Financial Management and Decision-Making
8. Community Resource Development
9. Preparing Florida's Youth for the World of Work

Stakeholder Input Process:

Stakeholder input was sought at several different levels. These included: small farmers, agricultural commodity producers, agricultural industry, consumers, environmental groups, private foundations, Florida Department of Agriculture, county extension workers, state and federal agencies, faculty, staff and students at the University. The Landgrant Program Advisory Council consisting of 36 members from the groups indicated above were instrumental in advising the research and extension programs. Input from stakeholders was also received through producers' committees, workshops and listening sessions.

Program Review Process:

A comprehensive review of the total landgrant program (teaching, research and extension) was conducted in April 2000 by a team of scientists led by Dr. Larry Miller of CSREES. The recommendations made by the team are being implemented. A research review committee in the College is now operational and is responsible for project proposal reviews. External reviews were arranged by either the committee or individual principal investigators. Comments and suggestions made by the Advisory Council and stakeholders were incorporated into the programs.

Evaluation of the Successes of Multi and Joint Activities

The 5-year 'Plan of Work' submitted by Florida A&M University was a joint effort between the research program and the extension program. The Plan was approved by CSREES. The programs under various National Goals were jointly developed and are now being implemented. Based on program needs, the research faculty participated in extension and outreach activities and the extension faculty provided helpful suggestions in designing research studies. The programs conducted through various centers (water quality, viticulture, goats, biological control and others) incorporated teaching, research and extension activities. For example, the Center for Water Quality offered courses in soil and water science, addressed critical research issues in water quality and provided assistance to extension workers in this area. Several joint projects, as well as, joint faculty appointments, were put in effect to tackle the total issue rather than separate components. In this regard, collaborations were sought and established with other 1890 and 1862 universities. Major partnerships were established with several agencies including ARS, FS, APHIS, NRCS, NASS, and BLM.

Goal 1: An Agricultural System that is Highly Competitive in the Global Economy

Overview

Florida A&M University planned and implemented activities in three program areas to address this goal. All three of these areas involved research and extension programs. The first program area was the Goat Production in Florida. A statewide program was implemented in collaboration with the University of Florida. The second program area was the Viticulture and Small Fruit Program. The third program dealt with the Diversified and Alternative Agriculture.

State of Florida County data estimated that there are 40,000 goats in Florida in 1998. This figure represents a 55 percent increase in goats during 1992. The raising of goats, as an alternative enterprise in farming systems can provide a profitable and sustainable source of income for small-scale farmers in Florida's rural communities. However, production cost, the production of a superior meat and dairy type goat, herd health and marketing have been determined to be limiting factors in Florida's goat industry. Our programs are addressing some of these concerns to keep this industry competitive in a global economy.

The Florida Legislature identified viticulture as an under developed industry with great economic potential. The grape industry in Florida has been hampered by the fruit quality from the currently available commercial varieties. There is a need to improve the quality of grapes in terms of disease and pest resistance, seedlessness, and development of fresh as well as wine grapes. There are currently 8 wineries and several fruit processing plants in Florida that can greatly benefit from new cultivars as well as new value-added products. Florida A&M University's planned program in viticulture addresses some of these critical issues.

a. Extension and/or Research Results (Statewide Goat Program)

The future of the goat industry in Florida depends on the profitability and sustainability of meat goat enterprises. Research, education and extension to improve the competitive position of goat producers in an increasingly concentrated market is essential. Production cost (feed 75% and health 15%) has been determined to be a limiting factor in Florida's goat industry. Also, alternative marketing tools and new market outlets are needed to keep producers competitive in the livestock industry.

There was a need to fully utilize the natural resources available to agriculture, including the integration of goat enterprises into farming systems that are primarily devoted to the production of crops. Therefore, it was essential to assess the nutritional value of various feeds available to goats, such as forages, crop residues, crop by-products, and browse and forb plants. These feeds were used to develop economic diets, which were fed to goats to reduce the cost of supplemental or grain feeding.

Parasitism in goats has a significant impact on the economic returns in a goat enterprise especially in intensive management systems. Therefore, an epidemiological study of the prevalence of anthelmintic resistance to the major parasites of goats was conducted two years ago. Understanding the epidemiology of different strains of parasitic worms in

goats allowed for better control through the selection of anthelmintic that work. Drugs integrated with grazing/pasture management to minimize transition of infection reduced health related cost.

Production and marketing are not independent decisions and information for both is needed to identify market development opportunities. Research was conducted to evaluate value added goat meat products for enhancing the marketability and ultimately profitability of goats production in Florida. Twenty-five (25) extension agents completed non-formal education programs on sustainable goat production practices (5). Twenty (20) agents planned to recommend one or more sustainable goat production practices. Fifteen (15) agents recommended one or more sustainable goat production practices. One thousand one hundred and eighty farmers (1,180) completed non-formal education programs on sustainable agriculture production practices and two hundred and twenty-five (225) adopted one or more of the recommended practices.

b. Successes

In the past years the major constraints to production systems (extension, mixed forage, and intensive) were a dependence on purchased inputs and an inefficient use of natural resources which resulted in low profit margins for goat producers. Realizing this situation, the research/extension program initiated non-formal education programs on sustainable goat production practices with two hundred and twenty-five (225) producers. One hundred and twenty (120) made use of pastures, browse, crop residues and crop by-products on a rotational basis. Less confinement of animals resulted in lower incidence of diseases, less subsequent treatment of antibiotics which created additional costs and contribute to antibiotic residues in animal food products. The result being less incidence of parasites, and therefore reduced use of antibiotics. Adoption of these sustainable production practices resulted in greater profitability and competitiveness for small goat producers.

c. Benefits

Adoption of sustainable agriculture practices enable the one hundred twenty (120) meat goat producers to reduce feed cost on an average of \$425/breeding unit and health cost on an average of \$180/breeding unit. This translates into savings of \$51,000 for feed cost and \$21,600 in health cost for 120 producers. Increased profitability improved the competitiveness of goat producers. Also increased profitability resulted in production goals and financial incentives for producers to improve breeding, feeding, health and management practices. Benefits of stakeholders include: (1) research, education and extension activities to improve animal production efficiency, agricultural profitability and competitive position of small and resource farmers positively impacted and increased the decision making skills of the end users as they go through lifelong learning, and (2) innovative collaborations and partnerships with stakeholders/end-users built sustainable solutions to agricultural and rural problems and forge partnerships for the future.

d. Assessment of Accomplishments

The Statewide Goat Program has met the immediate needs of the program's performance goals.

Stakeholder Input Process

a. Two types of actions were taken to seek stakeholder input and recommendations.

1. Community meetings - was used to discuss local problems, to design research and extension programs, to organize their implementation, and to interpret the applicability of the results. These meetings were a relatively inexpensive method for gathering valuable information, and the feedback prevented serious problems from developing.
2. Collaborative mode of participation - farmers were active partners in the research and extension process. They were involved in regular community meetings that were designed to clarify the logic of both the current practices and their demand for new technology. They participated directly in the planning, execution, and evaluation of on-farm programs.

a. Florida has active Meat and Dairy Goat Association and an active Statewide Goat Advisory Council. Both associations recommended stakeholders to serve on Advisory Council. Extension agents recommended non-goat producers to serve on the council and county extension directors recommended agents to serve on the council.

The rules and functions of the advisory council are as follows:

1. Facilitate communication and corporation between the goat research and extension program team with goat producers, community residents, processors, food service firms, restaurants and consumers.
2. Assist with problem identification, problem needs, and development of educational materials, delivery systems, training needs, and non-scientific evaluations of programs.
3. Represent the goat program in discussions with county and state government representatives as well as with other interested organizations.
4. Recommend and prioritize programmatic thrusts to be implemented.
5. Assist in the identification and procurement of resources, including fiscal physical and human resources essential to the successful implementation of recommended programmatic thrusts.

- a. Collected input was considered through consultative participation. Research and extension programs sought to tailor technology to the socioeconomic constraints that small farmers face. Surveys and meetings were used to identify problems and needs. This cumulative relationship is analogous to the relationship between a doctor and his patients.

Program Review Process

There have been no significant changes in our program review processes since our five-year Plan of Work was submitted.

Evaluation of the Success of Multi and Joint Activities

The future of the goat industry in Florida depends on the profitability and sustainability of meat goat enterprises. Research, education, and extension to improve the competitive position of limited resources and small goat producers, in an increasingly concentrated market is essential. Alternative marketing tools and new marketing outlets are needed to keep producers competitive in the livestock industry. Additional or alternative marketing systems, production technologies and management systems appropriate for small and limited resource goat producers are needed to identify and enhance the competitive position. One of the main objectives identified by the Goat Advisory Council- stakeholders in the 1999-2000 Plan of Work was to develop new products to enhance the quality of marketable goat producers including sausage, salami, and snack sticks. This meant the identification of new and expanded market opportunities where producers would have tools and strategies to meet consumer demand for specialized, lean, natural meats, and specialized value added products. The development of high quality value added products made from goat meat can fill impacts of emerging products from the farms of underserved and underrepresented populations. Shift of consumer lifestyles, stimulates change and increase opportunities for growth on these farms and in the Florida Meat Goat Industry. Also, the development of value added products from goat meat can create new markets for the identified clientele through innovative systems and enterprise developments, new products and new uses for agricultural products, and increase employment opportunities, which can lead to the economic liabilities in rural communities.

The collaborative research project between Florida A&M University and University of Florida resulted in the development of value added goat meat processed products in an effort to enhance the marketing of live goat meat.

Two goat meat processed products have been developed as a result of this research. The products include a fermented goat meat snack stick referred to as Cabrito Snack Stick, and a smoked goat meat sausage referred to as Cabrito smoked sausage. The marketing of the above high quality goat meat products will have significant economic impacts on meat goat production on a state, region and national level. The value-added products will also provide consumers with alternative meat products with similar characteristics, palatability, and accessibility as processed beef and pork products.

Improved marketing options for small and limited resource goat producers has become production goals and financial incentives for improving breeding, feeding, health, and management programs. Also, the development of alternative market options allowed producers to raise animals for the highest demand of price.

Key Theme: Adding Value to New Agricultural Products (Statewide Goat Program)

a. Description of Activity

Specialist from Florida A&M University and University of Florida are collaborating on a project to develop high quality value-added goat meat processed products in an effort to enhance the marketability of live goat and goat meat. The development of value-added products can create new markets for farmers through innovative systems and enterprise development. Research is currently in progress to complete consumer acceptance evaluations, nutritional profiles, profit analysis and cost analysis profiles for both products.

b. Impact

Thus far, two goat meat processed products have been developed. The products include a fermented goat meat stick referred to as "Cabrito Snack Sticks" and a smoked goat meat sausage referred to as "Cabrito Smoked Sausage." The data revealed that the Cabrito Snack Sticks were similar in protein content to commercially available meat snack sticks. The fat content of the Cabrito Snack Sticks was at least 20% lower than that reported for the commercially available products.

c. Source of Federal Funds - 1890 Research (Evans-Allen) and 1890 Extension Funds

d. Scope of Impact - State Specific

Key Theme: Diversified/Alternative Agriculture (Viticulture)

a. Description of Activity

Programs at Florida A&M University were redirected to address the needs identified by Florida Viticultural Advisory Council in 1998-99. The needs included: breeding and propagation of new and improved grape cultivars; best management practices for vineyards; increased acreage for fresh fruit and wine production; disease management research; and education and training for growers and processors. To improve muscadine as well as bunch grapes, classical plant breeding methods and recent plant biotechnological techniques were applied. Twelve new hybrids were selected and added to secondary trial.

In vitro collection of California bunch grapes, Florida bunch grapes and muscadine grapes was established. Research studies resulted in successful transfer of genes into somatic grape embryos. Transgenic plants are growing in the laboratory. Seedlessness

trait and better fruit quality in muscadine grapes is being further evaluated under field conditions. To identify the causative agent of Pierce's Disease in grapes, 10 strains of Xylella fastidiosa were characterized. Research done at Florida A&M University shows that vinifera grapes can be successfully grafted on to muscadine root stocks. Additional vineyard management practices are under study and results will be reported in the future. Extension and outreach included workshops conducted throughout the State to help grape growers in starting and maintaining a vineyard. Value added products such as wines, juices, jelly and jam are now being tested for their consumer appeal.

b. Impact

The viticulture research and extension programs produced more than ten refereed publications on grapes and grape products, and the program is now reorganized as a major research center for grapes in Florida and the southeastern states. Through extension and collaborative efforts with grape growers associations, there has been a renewed interest in grape growing, increased vineyard acreage, and wine production. During FY2000, 12 new demonstration sites were established. More than 350 people participated in workshops and seminars conducted by the program faculty on pruning, cultivar selection, starting a vineyard and vineyard management.

c. Source of Federal Funds: 1890 Research and Extension Funds

d. Scope of Impact: Southeastern United States

Key Theme: Diversified/Alternative Agriculture

a. Extension/ Research Results

Many small-scale farmers remain active in farming because of socioeconomic rather than economic reasons. Although farming is becoming a less profitable business for them, these farmers will maintain their holdings and engage in farming activities for several years without turning a profit. This factor has resulted in a decline in the number of small farmers, as many move away from farming. Some of these farmers however, elect to keep their land and may carry out production practices, which allow them to realize certain minimal goal. Others may find off farm employment in order to augment the family income. Compared to traditional crops, diversification into alternative crops and or practices potentially may be more profitable for the small farmer. This program seeks to improve the profitability of small-scale cropping system through evaluation and adaptation of new crops and alternative sustainable practices. Small-scale farmers evaluated several alternative crops for adaptation. The Scotch bonnet hot pepper continued to show good potential as an alternative crop for small-scale farmers in Florida. Farmers throughout the State who participated in an on-station demonstration studies reported good profits from the production and marketing of fresh peppers. Results of market survey showed that there is quite an extensive national and local market for the crop and its products.

b. Success

Because of warmer temperature and extended growing season, the lower southern US is highly conducive for the production of hot pepper as crop. Thus farmers in the test demonstrations have produced harvested and marketed several hundred lbs in Florida and Georgia. With price in the region of 1.50 to \$2.00 per lb, these farmers have realized incomes of up to \$20,000.00 per acre for hot peppers sold as fresh fruits.

c. Benefits

Farmers will benefit from this project in that they will have a new and profitable product for the market. This enterprise can be developed to include several value-added products, which can further increase the farmer's profit. Thus it could partially replace income lost through the removal of tobacco as a crop in the region, thereby providing some stability for small farmers.

d. Assessment

The performance goal of the small-scale profitability program has been met by the project.

Key Theme: Diversified/Alternative Agriculture.

a. Activity description

FAMU extension Program evaluated over 5 alternative crop enterprises over the period. These included; hot pepper (*Capsicum chinense*), Sorrel (*Hibiscus sabdariffa*), Vegetable amaranth (*Amaranthus sp.*) and pigeon pea (*Cajanas cajan.*). The hot pepper project “ A HOT ROW TO Grow “ which included on-farm demonstrations, on-station studies and market development were carried out at state and county levels. Three workshops and one field day were conducted to expose farmers to production, management and marketing strategies for this crop.

b. Impact

Twenty-six individual farmers and two cooperatives participated in the on-farm demo projects. Some 9,000 seedlings were produced and distributed among the participants. Market survey identified over 25 existing markets for the produce showing weekly needs for several hundred pounds of fresh pepper. Farmers have reported profitable income ranging from \$4,000.00 to \$20,000.00 per acre. On-station studies to evaluate mulch system as an alternative production technique, showed that grass and legume clippings can be effective materials for use in producing the crop. Some

- c. Source of funds: Center for Cooperative Agriculture Programs (CCAP)
 SARE
 State of Florida, 1890 Research and Extension

d. Scope of Impact: State Specific

Stakeholder Input Process

This project is included in the plan of work for county extension personnel and thus receives the review and approval of the respective county advisory council. Additional input comes through the directors and membership of two local cooperatives who are supporters of the program.

Review Process

There has been no change in the program review process since the submission of the five-year plan of work.

Evaluation of Success

Addressing critical issues of strategic importance: A main issue identified by stakeholders is that profitability from traditional crops on small-scale farms is poor. Therefore the program's goal was to find ways to alleviate this situation. In this sense then it has been successful in identifying a crop enterprise with a high profit potential and which can be developed into a successful and stable industry to benefit small farmers.

Gearing the activities to address the needs of small-scale limited resource farmers clearly satisfy the need to address traditionally under-served and under-represented populations within the State. The addition of a marketing input is a new dimension to the program coupled with the emphasis on productivity, has resulted in greater efficiency in the delivery of the program hence its effectiveness in meeting the stated goal. The expected outcome was to realize a better return for small farmers from their land thus encouraging them to remain as active farmers. The activity of this program strongly supports such a venture.

Goal 2: A Safe and Secure Food and Fiber System

A new program area under the goal is being added this year. This program area is - Herd Health and Food Safety. (Please see addendum for information on this program). Accomplishments and results will be reported next year.

Goal 3: A Healthy, Well-Nourished Population

Overview

Florida A&M University planned and implemented one program area to address this goal. The program consisted of gathering information on nutritional habits of various age groups and recommending ways to improve it.

Nutrient intakes influence the development and sustainability of optimal health, infant and maternal well-being, and physical fitness. A better understanding of diet and health

relationships not only contributes to improved quality of life and increased productivity, but also guides adjustments in food production system and reduces health care costs.

Infant mortality continues to be a problem in the United States, with low birth weight being a major determinant. Poor nutrition among expectant mothers is a major factor contributing to this problem. High-risk populations include women in limited-resource households, the minority population, and those people with less than a high school education.

a. Extension and Research Results

In North Florida, the nutrition and health of families is being influenced by limited resources, financial instability, an increase in the number of female-headed household with low incomes, a high rate of illiteracy, and a lack of information regarding basic nutrition and health principles. The nutritional needs of pregnant teens and pregnant females with limited resources are of great concern since they are at great risk of having low birth weight infants than females of higher socio-economic status. The nutritional needs of older adults are also of great concern since they may also have limited resources with which to make food-related decisions.

The Florida A&M University Family Resource Management Extension Specialist and two county-based program Assistants conducted a nutrition program which used the Food Guide Pyramid and the Dietary Guidelines as a basis for teaching meal planning. Because of limited staffing, nutrition seminars were conducted in a 3-county area that include Leon County, Gadsden County, and Wakulla County. All at-risk, and hard-to-reach age groups were targeted since they all present special nutrition challenges.

b. Successes

Four hundred senior citizens attended 60 nutrition seminars. Two hundred twenty-five recognized the food guide pyramid and were able to use it in developing a meal plan. One hundred recognized the effects of sodium in the diet. Six hundred women from the WIC program attend 127 nutrition seminars where they learned the importance of breakfast for themselves and their children, basic nutrition, ways to stretch food dollars, and how to choose healthy snacks for themselves and their children. As a result of these seminars, 50 clients indicated that they recognized the importance of providing breakfast for themselves and their children, 76 indicated that they intended to provide breakfast on a regular basis, 25 shared knowledge of ways to stretch food dollars with others attending the seminars, and 100 indicated that they understood how excess sodium in the diet affects the body. Over 300 youth in after-school community-based programs, 4-H groups, and other community program also attended nutrition seminars. As a result of their participation in the seminars, 260 increased their knowledge of how to choose healthy snacks and the role of exercise in a healthful lifestyle.

c. Benefits

The benefit of the nutrition education program to stakeholders is that participants indicated that they would use information from the nutrition seminars to improve individual and family meal planning practices. Improved diets and adoption of recommended lifestyle practices such as incorporation of exercise into lifestyles are expected to result in improved health for participants.

d. Assessment of Accomplishments

The Florida A&M University Cooperative Extension Family Resource Management Nutrition, Diet and Health Program has met the immediate performance goals.

Stakeholder Input

- a. Meetings were held with representatives of community groups and with stakeholders themselves in order to obtain their input and recommendations. Input from these groups was critical to the success of the program, given the limited resources of the Extension program. Input from these groups assisted the specialist to narrow the focus of the program to those concepts deemed appropriate by these groups.
- b. The Florida A&M University Cooperative Extension Family Resource Management Program Advisory Committee was developed as a result of the Specialist's and program assistants' interactions with community group representatives and with clientele themselves. Advisory committee members were selected based on interactions with these individuals, recommendations from clientele, and the degree of interest/perceptions of potential members as to their roles as stakeholders.
- c. Information from the advisory committee was considered when developing each program and activity within the program. In many instances, advisory committee members served to recruit program participants and to promote program activities.

Key Theme: Human Nutrition

a. Description of Activity

The Family Resource Management Specialist from Florida A&M University, two county program assistants, representatives from community groups and representatives from targeted clientele collaborated to develop a nutrition, diet and health program designed to reach underserved potential clientele.

e. Impact

Four hundred senior citizens attended 60 nutrition seminars. Two hundred twenty recognized the Food Guide Pyramid and the Dietary Guidelines in developing a meal plan for themselves or their families. One hundred participants recognized the effects of

sodium in the diet. Six hundred women from the Women, Infants and Children's Program (WIC) attended 127 nutrition seminars where they learned the importance of breakfast for themselves and their children, basic nutrition, ways to stretch food dollars, and how to choose healthy snacks for themselves and their children. As a result of these seminars, 50 clients indicated that they recognized the importance of providing breakfast for themselves and their children, 75 indicated that they intended to provide breakfast on a regular basis for themselves and their children, 24 shared their knowledge of ways to stretch food dollars, and 100 indicated that they understood how excess sodium affects the body. Over 300 youth in after-school, 4-H and other community programs also attended nutrition seminars. As a result of their participation in the seminars, 260 increased their knowledge of how to choose healthy snacks and the role of exercise in a healthful lifestyle.

- c. Source of Federal Funds: Smith-Lever, 1890 Extension Funds
- d. Scope of Impact: State Specific

Goal 4: Greater harmony between agriculture and the environment

Overview

Two programs were planned and implemented to address Goal 4. The first one, Water Quality and the Environment and the second one, Biological Control. These program areas were administered through the Center of Water Quality and the Center for Biological Control, respectively.

One of the most pressing national priorities is the protection and improvement of our water resources. This is especially true in Florida where approximately one-third of land forms are wetlands and the drinking water is mostly drawn from shallow underground aquifers. Agricultural and other hazardous chemicals, urban storm water runoff, and erosion sedimentation all find their way into surface and ground water, causing both point and nonpoint sources of pollution. Florida's increasing population (now 14 million) continues to put a high demand on the state's water resources. In 1990, for example, some 7,530 million gallons of fresh water were withdrawn daily for domestic and other uses. Approximately 63% of this were groundwater. In fact, according to the *Florida Statistical Abstracts* 1992, during this period of July 1990 to June 1991, over 1,976,734 tons of fertilizers were applied to crops and landscapes in the state by large and small-scale farmers and homeowners. It is routine for small-scale farmers in north Florida, for example, to apply up to 1,000 lbs./acre of inorganic fertilizer to their corn. The high seasonal rainfall occurring in Florida (average 55 inches annually), will readily facilitate leaching and/or runoff of these chemicals, ingredients of paramount importance to the state's agricultural industry, be used and applied in such manner that they do not become polluting agents of the state's valuable water resources.

Florida also has a warm humid climate, a diversity of natural ecosystems, and is one of the leading agricultural states. As a result, it is particularly vulnerable to wide variety of insect pests and weeds. Rising public concern about food safety and environmental quality has left

many of those responsible for controlling such pests with a severe pesticide crisis. While effective pest control is critical in most agricultural/horticultural systems, it is becoming increasingly clear that excessive reliance on chemical pesticides can be costly, can result in primary and secondary pest outbreaks triggered by the development of resistance and the destruction of beneficial natural enemies, and can lead to serious pollution problems. The cost of developing new, more selective and environmentally friendly pesticides is often prohibitive. Therefore, the need to adopt sustainable, less pesticide intensive pest control practices is clear.

Biological control, or the control of pest species using natural enemies, is a prime component of sustainable agriculture. Examples of biological control include the importation and establishment of exotic natural enemies, the mass release of natural enemies as "bio-pesticides", and the conservation and enhancement of existing natural enemies. To fully realize the potential of biological control, proper identification of the taxa involved, as well as a sound understanding of how beneficial and pest species interact in the environment, are needed. Such information is necessary to integrate biological control into agricultural production, or into more general pest control systems.

To this end, the FAMU program for Biological Control continues to provide a unique service in teaching, research, and community outreach in four broad areas relating to biological control - 1) Insect Taxonomy, 2) Mosquitoes and other Biting Flies, 3) Vegetable Insect Pests, and 4) Invasive Alien Species.

Key Theme: Water Quality

a. Description of Activity

A water quality laboratory was established to analyze water samples for organic and inorganic components. Efforts are now underway to receive QA/QC certification from the State of Florida.

Studies on nitrate movement in soil under two crops (corn and tomatoes) was completed. Working closely with scientists from the University of Florida, "Best Management Practices" for these two crops are being developed. Research and Extension Programs jointly conducted field trials on farmer's fields to demonstrate efficient use of nitrogenous fertilizers. A mobile water-testing laboratory was put into operation to monitor drinking water wells in Florida panhandle. Research studies in collaboration with NRCS, USDA and selected farmers in north Florida have been initiated to study the use of constructed wetlands in disposing animal waste products. Results of our current research in many natural coastal and freshwater wetlands in Florida show potential use of wetlands in the N and P removal from contaminated waters.

Florida A&M extension Program continued on-farm demonstration and on-station research projects, to provide farmers with information which will allow them to make effective discussion in carrying out practices that are water quality enhancing. The projects dealt with the development of best management practices (BMPs) in staked tomato and field corn production. In staked tomato production variable nitrogen rate and

cover crop usage were researched and demonstrated to farmers and others. For field corn production, variable spatial arrangement and nitrogen rate were the applied techniques. Extension Program also established a 'mobile drinking water laboratory', which monitor privately owned rural shallow drinking water wells for nitrates, pathogen and pH. This activity provided non-traditional small farmers and rural residents with on site relevant information relative to the quality their domestic and drinking water. The result of the monitor exercise was then presented to the homeowner along with the relevant advice. The occasion also provided an opportunity to educate these citizens about their input and relationship with the quality of their drinking and domestic water supply.

b. Impact

"Best Management Practices" for tomatoes and corn will result in reduced use of nitrogenous fertilizers and consequently, less nitrate in surface and ground water. Tomato growers in north Florida and small farmers in the surrounding counties benefited from the information developed and disseminated by Florida A&M University. The wetland research had impact on the potential use of Florida's wetlands for nutrient cycling.

In the staked tomato demonstration the cover crops proved to be effective in taking up soil residual nitrogen thereby preventing it from leaching to ground water. The corn production studies showed that multiple application of nitrogen rate was effective in preventing nitrate leaching compared to single application. In terms of the cover crop demonstration, a field day was held on 04/01, attended by 32 persons including students, NRCS personnel, and county extension agents. In Jackson County where the project was launched, to date approximately 252 homes involving 2,128 persons were visited.

c. Source of Federal Funds: 1890 Research and 1890 Extension Funds, State of Florida, NRCS

d. Scope of Impact: State of Florida and the Southeastern United States

Stakeholder Input process

This project received the participatory input of the advisory council for the Center for Water Quality and the respective county advisory group, and Extension agents.

Program Review Process

The review process for this project will be in keeping with those stated in the submitted in the 5-year plan of work. Success of a program will depend on its acceptance by and participation by the targeted audience. There has been no change in the program's review process since submission of the 5-year plan of work.

Evaluation of Success

Small-scale farmers and limited resource citizens in rural areas have not been traditionally targeted for programs addressing issues relative to the environment and water quality. This program seeks to provide this audience with up dated information which they can understand and be encouraged to adopt. The information being developed and the mobile laboratory specifically address the underserved and underrepresented in the nation. Therefore in this capacity the program can be accepted as successful. By visiting these citizens in their homes and holdings to teach them about protecting their water resources has significantly improved the efficiency of the program.

Key Theme: Biological Control

a. Description of Activity

The Center for Biological Control recently established at Florida A&M University is the only HBCU/USDA linked facility in the United States in the field of biological control. The Center began operation in 1999, although extensive research in biological control has been ongoing for the past 25 years at Florida A&M University.

As a member of the Diaprepes Task Force, studies on Florida's most important citrus weevil pest are underway. Florida A&M University provided the taxonomic support to several cooperating scientists. Identification by Florida A&M University of the Australian Melaleuca leaf weevil made its release possible as a biological control agent against this important weed tree in the Everglades and the South Florida region. To control the aquatic weed, Hydrilla, in freshwater streams and lakes in Florida, several thousand live flies were released and are now being monitored for their effectiveness. Biological control studies on the aquatic weed Salvinia are underway and results will be reported next year.

b. Impact

The program in biological control had a major impact on preserving the quality of water in streams and lakes in the State of Florida. It also added value to many of the sites by attracting ecotourism. One of such places is Wakulla State Park, near Tallahassee, FL where Hydrilla is being controlled through biological control. Other areas include: the Everglades and Florida's irrigation canals and intercoastal waterways. Citrus root weevil work is in preliminary stage, however, it will have a major impact on the citrus industry in the future.

c. Source of Federal Funds: 1890 Research (Evans-Allen) Funds

d. Scope of Impact: State and National

Goal 5: Enhanced Economic Opportunity and Quality of Life for Americans

Overview

a. Extension and Research Results (Financial Management and Decision Making)

Economic uncertainty is one of the major problems facing families with limited resources in north Florida. Changing employment opportunities in the area, declining purchasing power, and lack of knowledge and skill in management of resources affect well-being of these families. Although many hard-to-reach and underserved clients could benefit from improved knowledge and skill in management of resources, they are not being reached with this information. The Florida A&M University Extension Family Resource Management Specialist and two county-based program assistants conducted a family resource management program targeting under-served and hard-to-reach audiences. This basic resource management program consisted of financial goal setting, development of corresponding spending plans, credit management, and understanding advertisements and their affect on consumers.

b. Successes

More than 70 first time 4-H community club members learned how to select a credit card, how to identify "weasel" words in advertisements, and how to set financial goals and make plans to accomplish these goals. Summer program participants developed a plan for purchasing school supplies - deciding what was actually needed and what was wanted. Ten parents informally surveyed indicated that they found this tremendously helpful to them and their children.

Sixteen seminars were held for 100 first-time homeowners. As a result of these 100 percent of these families were able to determine their income, keep financial records for a period of time, develop and savings/spending plan, read a credit report, and develop a debt reduction plan. As a result of these families participating in this program, 20 were able to receive funds from the SHIP program for necessary repairs on their homes.

The Family Resource Management Specialist conducted 4 credit management seminars with approximately 76 college students. As a result of these seminars, all participants were able to determine when to use credit, the types of credit, the importance of a good credit record, favorable debt load, and where to go for help should they find themselves overextended. Five students requested individual consultations and two were referred to the local Consumer Credit Counseling Service for additional assistance. Both students indicated that they felt that Extension's assistance had been invaluable to them.

c. Benefits

The benefit of the program to stakeholders is that participants were able to increase the efficiency of their financial management plans by learning to develop financial goals, corresponding spending plans, and to manage credit more effectively. Twenty families

were able to receive funds to repair their homes as a result of the participation in these programs.

d. Assessment of Accomplishments

This program has met its immediate performance goals.

Key Theme: Financial Management and Decision Making

a. Description of Activity

The specialist from Florida A&M University, county program assistants, representatives from community groups developed a family resource management program that consisted of seminars designed to reach underserved clientele with information on financial goal setting, development of corresponding spending plans, credit management and understanding the difference between wants and needs and how wants and needs are influenced by advertisements.

b. Impact

Youth in community-based 4-H clubs learned important information regarding how to set personal financial goals, how to analyze advertisements, and how to select credit cards. The impact of learning these skills is more efficient management of personal finances. Additionally, these youth are expected to become better informed consumers as a result of their skills in analyzing advertisements.

First time homebuyers learned how to manage their finances, and as a result, were able to qualify for loans for home repairs. This not only impacted the quality of life for these families, but also for the communities they live in.

As a result of credit management seminars, college students learned how to more effectively manage credit. The impact of these credit management seminars include identifying and referral of students with heavy debt loads for additional personal assistance and providing information relative to credit management to a number of students who might not be reached otherwise.

c. Source of Federal Funds: Smith-Lever, 1890 Extension

d. Scope of Impact: State Specific

Stakeholder Input

a. Meetings were held with representatives of community groups and with stakeholders themselves in order to obtain their input and recommendations. Input from these groups was critical to the success of the program, given the limited resources of the Extension

- program. Input from these groups assisted the specialist to narrow the focus of the program to those concepts deemed appropriate by these groups.
- b. The Florida A&M University Cooperative Extension Family Resource Management Program Advisory Committee was developed as a result of the Specialist's and program assistants' interactions with community group representatives and with clientele themselves. Advisory committee members were selected based on interactions with these individuals, , recommendations from clientele, and the degree of interest/perceptions of potential members as to their roles as stakeholders.
 - c. Information from the advisory committee was considered when developing each program and activity within the program. In many instances, advisory committee members served to recruit program participants and to promote program activities.
 - d. Source of Federal Funds: Smith-Lever, 1890 Extension
 - e. Scope of Impact: State Specific

Key Theme: Community Resource Development

Overview

- a. Extension and/or Research Results (Community Resource Development)

North and northwest Florida communities are changing. Individuals and families are increasingly confronting changing social, economic and demographic environments. The quality of life in these communities is jeopardized by lack of affordable housing, community vitality and job opportunities for adults and youth. For many years these communities depended on agriculture as the foundation for economic survival. Agriculture production in these communities has ceased to provide sustained economic well-being and employment opportunities. Real declines in local, state and federal funding for social welfare programs impede alternative community development programs. Grass-root community organizations must be empowered to generate and manage resources so that they make productive contributions to their communities.

In an attempt to answer relevant issues concerning the lack of employment opportunities and sustained economic well-being of communities and individuals the extension program employed various strategies to improve the social economic problems in the various communities. Through individual consultations and group learning experiences the extension program created and cultivated environments which were conducive to the development, growth, and retention of businesses and economic enterprises in its nine targeted communities. The main focus of these programs was to help communities and individuals enhance their economic competitiveness in a global environment.

b. Successes

As a result of this program the Business Development Specialist provided individuals consultations to twenty people wanting to start a business or expand an existing business and six people that needed redirection in their business planning. Also ten training meetings and workshops where one hundred and ninety three people attended was held to enhance business development skills.

Consultations and training meetings and workshops brought about significant changes that were related specifically to program implementation efforts.

c. Benefits

One of the main features of the Community Resource Development Program was the collaboration with the Small Business Development Center. The objective of this collaboration was to assist community leaders to establish business retention and to develop economic policies and strategies for resolving conflicts between environmental impacts and economic development. Community group meetings and workshops were strategies used to achieve this objective. Benefits to clientele/stakeholders included: (1) helped local leaders to be more responsive and adaptive to change, (2) helped community leaders understand the interdependence of environmental, economic, family, and community factors, and (3) identified issues and prioritized needs for environmental or economic development.

d. Assessment of Accomplishments

It is our belief that the Community Resource Development Program has met its immediate goals relative to individual consultations, group learning experiences, business establishment and retention, and employment and income generating.

Key Theme: Home Based Business Education

a. Description of Activity

Business Development Specialist worked with community individuals to develop home based businesses. The objective was to develop educational programs for these individuals to plan and develop businesses that can be implemented for their homes. These programs were presented at group meetings and workshops.

b. Impact

Two home-based businesses were developed as a result of extensions educational programs.

c. Source of Federal Funds: Economic Development Administration, 1890 Extension

- d. Scope of Impact: State Specific

Stakeholders Input Process

- a. Actions Taken to Seek Stakeholder Input

Community Resource Development (CRD) Programs were developed in consultation with customers and were delivered in cooperation with stakeholders-organizations and agencies with a stake in the existence and content of programs. Meetings were held with local government officials, economic development professionals, public officials, and community residents to explain the CRD Program with respect to its goals, objectives, and desired impacts. Each individual of the target audience was asked to submit the name of an individual in their organization to serve on the advisory board.

- b. Brief Statement of the Process Used to Identify Individuals and Groups

After the identification of these stakeholders from these various organizations, the Dean of the College wrote each stakeholder thanking him/her for agreeing to participate on the Small Business Advisory Board. In his letter he stated that each board member will participate directly in the planning, execution, and evaluation of economic development programs. The duties and responsibilities of the Advisory Board are as follows:

- v Assist with problem identification, program needs, training needs, and the development of educational materials.
- v Recommend and prioritize programmatic thrusts to be implemented.
- v Assist in the identification and procurement of resources.

- c. Statement of How Collected Input was Considered

Collected input was considered in the planning, development, implementation, and execution of economic development programs.

Program Review Process

There have been no significant changes in the Community Resource Development Program review process since the 5-year plan of work was submitted.

Evaluation of the Success

The critical issues identified by stakeholders were business development and increased employment. Non-formal training, group meetings, and workshops were used to address the critical issues mention above. The educational programs that were developed to provide training such as Starting and Managing a Small Business, Starting and Managing a Home-Based Business, How to Prepare an Effective Business Plan, etc... resulted in changes in employment opportunities, number of small businesses started and existing businesses expanded. The

planned programs resulted in program effectiveness and efficiency because it brought about significant KASA changes among clientele.

Key Theme: Workforce Preparation - Youth

Overview

a. Extension and/or Research Results

The concern with the capacity of the American workforce to command the knowledge and skills needed to capture the new jobs of the 21st century has been the theme of central interest to many educators, employers, decision-makers, and others during the last decade. Due to rapid changes in technology, and the expanding need for an educated, flexible, and multi-skilled workforce, increasing attention has been given to the need to invest in our country's human resources. The focus has been not only on the retraining of the current workforce to better align itself with the merging and expanding jobs, but also one of providing young individuals with the quality education and experiences they need to move successfully into the labor force upon completion of their schooling.

The extension program initiated many strategies and activities to involve youth in transition into the world of work. Youth was provided with the opportunity to explore and understand career opportunities that are consistent with the high demand for jobs in the future. Also, they were provided with educational programs that teach employability skills that can facilitate future career opportunities. Seventeen (17) students participated in the world of work training sessions to assist them in seeking employment and maintaining a job once they have completed high school.

b. Successes

The extension program conducted hands-on classroom sessions in the World of Work to over six thousand youth. They were taught developing good self-esteem, personal hygiene, how to keep and maintain a job, social skills, personal grooming, and job interviews (mock sessions). As a result of this training one thousand eight hundred fifty (1,850) of these students now have part-time jobs with industry, agencies, organizations, services and with the school system.

c. Benefits

The world of work training program that the youth were involved in, enabled them to maintain their jobs longer than those youth who were not in the program.

d. Assessment of Accomplishments

One of the performance goals is to assist youth in assessing specific socio-economic issues and those of more general concerns such as job/employment issues. The world of work program enabled youth to make successful career choices and transitions including the development of entrepreneur skills. Also, the program enabled youth to update their

skills – to keep up with changes in the work place and to take advantage of new opportunities.

Key Theme: Workforce Preparation - Youth

a. Description of Activity

The family and consumer science agent, program assistant and county extension agent conducted fourteen (14) ninety minute hands-on classroom sessions to twelve (12) exceptional education students with learning disabilities. The classroom sessions stressed communication and social skills, the art of listening, conflict resolution, personal grooming, stress management, and how to dress for an interview.

b. Impact

Six (6) of the students were able to get part-time jobs at Jefferson High School despite their learning disabilities.

c. Source of Federal Funds: 1890 Extension

d. Scope of Impact: State Specific

Stakeholders Input Process

a. Actions Taken to Seek Stakeholder Input

Letters were sent to various organizations and individuals asking them to participate in a 4-H advisory committee. Presently, the committee is composed of one 4-H'er, one volunteer, one parent, one county commissioner, a member of the county sheriff department, a school teacher, and a retired school teacher.

b. Brief Statement of the Process Used to Identify Individuals and Groups

Letters were sent to each of these individuals from the County Extension Director thanking them for accepting participation and membership in the 4-H advisory council. Also, he stressed their importance on the committee as a means of developing leadership, citizenship, and socio-economic development of youth.

c. Statement of How Collected Input was Considered

Input was collected from the committee through their roles and responsibilities which are the following:

- Identification of critical needs and concerns that relate to youth in the county
- Recommend priority educational programs, objectives and goals
- Identify priority clientele in geographic areas

Program Review Process

There have been no significant changes since the 5-year plan of work was submitted.

ADDENDUM

Additional program areas added in FY2000 - 2001

Goal 2

Program Area

Herd Health and Food Safety

Goal 5

Program Area

**Adult and Child Health and Wellness Program
Small Farms and Rural Development**

Results and accomplishments for these programs will be reported next year.

Goal 2

Program Area: Herd Health and Food Safety

Statement of Issue

Food-borne illness and animal health continue to be major concerns throughout our population. In a state that is comprised of many immunocompromised individuals in the form of the elderly and the young, this issue will continue to be of paramount importance. Nationally there are an estimated 76 million cases of food-borne illnesses accounting for over 375,000 hospitalizations per year with approximately 5,000 reported deaths. There is a direct correlation between herd health and food safety, since many of the food borne hazards originate on the farm or with the animals. The impact of sound herd health practices will also benefit producers in areas of productions, efficiency, and cost effectiveness. The food safety issue will continue to be one that will need to be addressed by consumers, processors and producers of consumable goods. The extension program can be a major contributor to combating food safety and herd health problems.

Performance Goals

- Reduce on-farm herd health problems
- Reduce Food Safety violations
- Reduce the incidence of non judicious use of antibiotics
- Increase herd performance by the use of science based management programs
- Increase consumer awareness for food safety responsibility.

Output Indicators

Extension

- Number of Consultations
- Number of group learning experiences
- Number participating in group learning experiences
- Number of educational materials prepared

Research

- Clearer understanding of food safety Risk Factors in small ruminants
- Better understanding of control of risk factors throughout the food chain

Outcome Indicators

- Adoption of science based food safety practices at the producer level
- Adoption of science based food safety practices at the processor and consumer level
- Adoption of science based herd health practices at the producer level

Key Program Components

- Teaching-program development, seminars presentations
- On Farm visitations and consultations
- Development of Food Safety Models

Internal and External Linkages

Multi-state-Florida, USDA, GA, AL
Multi Agency, University of FL, Ft. Valley State, Fl Dept of Agriculture and Consumer Services, Florida Department of Health, Florida Department of Business and Professional Regulations, Food and Drug Administration
Consumer Groups
Small and Large-scale Farmers
State and Local producer associations
Extension Personnel
Intra University collaborations

Target Audiences

- Small farm producers and processors
- Consumer groups
- Food animal associations
- Food service operators and Food industry personnel
- Governmental agencies
- Youth
- Students

Evaluation Framework

- Determination of the number of target that have adopted practices leading to
- Reduction of non-judicious use of drugs and medications
- Reduction in unsafe food practices and herd health practices

Program Duration

Long term (2001-2005)

Allocated Resources

The Herd Health and Food Safety program will receive funds through the FAMU cooperative extension program, as mandated by state and federal requirements.

Educational and Outreach Programs

- Training seminars and workshops
- Conferences
- On Site consultations
- Field days and demonstrations

Goal 5: Enhanced Economic Opportunity and Quality of Life for Americans

Program Area: Adult and Child Health and Wellness Program

Statement of Issue

Estimates are that by 2015 there will be more African Americans in the state of Florida than in any other state. This will cause major changes in the health status of minorities and underserved because aggregate demographic shifts cause social, economic and political problems. Advancement in technology and education alone will not rectify the problems for poor health as a major issue for minorities and the underserved because the major focus has been placed on nutrition. A clear assessment of which sickness and disease pose the highest threat to this particular population has not been determined. In addition, identification of thematic sources of information, knowledge and beliefs held by youth, minorities, elderly and rural citizens concerning the origin of major illness has not been explored.

The future of small farmers, minority farmers and the underserved population depends on helping them have the ability to recognize sickness and disease consequently allowing them to tap into the appropriate resources for care. Research, educational and extension programs must be geared towards understanding the culture of sickness, illness and disease through the eyes of the population being served. Many small farmers, minority farmers and underserved have limited or no resources for health care. The way in which they assess and treat sickness, illness and disease must be understood in order to improve their quality of life.

Once health beliefs are understood behaviors can be examined to determine how to best educate this population about those illness and disease that pose the highest threats.

Performance Goals

- Increase the number of small farmers, minority farmers and underserved participating in prescreening for major illness
- Increase the number of people in farming communities aware of signs and symptoms for major health illness, i.e. heart disease, diabetes, strokes, prostate and breast cancer.
- Increase the number of African American women obtaining mammograms and treatment for breast cancer.
- Reduce the disparity in health care among farming families, rural families, poor families and minority families by examining how illness and disease is interpreted.

Output Indicators

Extension

- Number of people contacted for prescreening
- Number of people participating in educational programs
- Number of persons seeking preventive health care and screenings
- Number of persons who participate in follow-up treatment

Key Program Components

- Collect, analyze and develop baseline data
- Distribute data
- Provide screenings
- Develop and distribute educational materials
- Multi-disciplinary
- Multi-institutional
- Multi-State

Targeted Audiences

- Small farmers, minority farmers and underserved with limited information about health care choices
- Small farmers, minority farmers and underserved with limited access to health care
- Small farmers, minority farmers and underserved who have not participated in preventive health education programs
- Small farmers, minority farmers and underserved at risk for diabetes or heart disease
- Family members at risk due to genetic, environmental or other factors
- Women age 40 and over for breast health education

Evaluation Framework

- Data will be collected to identify cultural health beliefs through surveys, focus groups or face-to-face interviews
- Analysis of the data will identify important information for the community
- Educational materials and programs will be developed and delivered targeted to the community based on an analysis of the data.

Program Duration

Long term (1999-2004)

Allocated Resources

The Adult and Child Health and Wellness Program receives appropriation from the Cooperative Extension formula and annual special grants. Expenses cover salary for one 1.0 FTE, a faculty member.

Education and Outreach Program

- Focus groups
- Training meetings
- Workshops
- Seminars and conferences
- Method and results demonstrations

Program Area: Small Farms and Rural Development

Statement of issue

State of Florida Agricultural Census (1997) reported that of the 34,799 Florida farms that were sampled, 1318 farms of that total were operated by Black and other races- 643 farms were operated by Black Americans; 135 were operated by American Indians; 278 were operated by Spanish, Hispanic, or Latino Americans. USDA Profile of hired farm workers (1998) suggests that almost 42 percent of hired farm workers were Hispanic; nearly 6 percent were reported Black and others; sixteen percent were women.

As we enter the 21st century, a key issue within agricultural research and extension development is the need to positively *focus* on the small farmer and farm families. Generally, small farmers have not been the *primary* focus of agricultural research and extension, or agricultural growth and development. Traditionally, these underserved groups have not had equal access and participation in programs and training designed to assist large producers and agribusiness. Agricultural research/extension has often sought out medium and large farmers, thought more successful, innovative, and readily able to adopt technology and contribute to growth and development.

Performance Goals

The performance goals include:

- Extent of farmers participation in project design and development
- Strive to enhance market technology development/networking national/global
- Access to adoption of relevant technologies/messages
- Improve access to training (i.e. hands-on) and capacity building (i.e. farmer-to-farmer transfer, planning and decision making) for target population and extensionists
- Enhance/strengthen the sustainable development of underserved and underrepresented populations of small farmers, farm workers, and their families
- Encourage farmer feedback and follow-up

Output indicators

Extension

- Number of small farmers/farm workers/farm families participating in activities, alternative technologies, etc.
Defining how target population are participating
- Number of small farmers/farm workers/farm families actively involved in specific projects or activities
- Number of small farmers/farm workers/farm families reached
- Before and after numerical and narrative data on small farmers/ farm workers/farm families' adoption of alternative technologies/messages
- Before and after numerical and narrative data on the sustainable benefits to the participants

Research

- Identify relevant technologies and messages
- Determine program effectiveness
- Determine sustainable benefits indicators
- Determine across project comparison of results
- Determine impact on community/region
- Increased collaboration between Agricultural Technology Education and target small farm population

Outcome Indicators

Outcome indicators include:

- Grassroots farmer/farm worker/farm family participation
 - " Changes impacting an increased participation level (small farmer groups, cooperatives, planning and decision making, leadership; capacity building; participant-oriented programs, etc.)
 - " Changes impacting an increased active participation of small farmers, farm workers, small farm families
 - " Increased networking
 - " Enhanced market technology development
- Adoption of alternative technologies/messages
- Increased capacity building
- Identification of sustainable benefits to small farmers, farm workers, farm families, community
- Identification of key projects

Key Program Components

A statewide program:

- Utilizing an holistic, multi-disciplinary, and participatory approach to the sustainable development of small farmers/farm workers/farm families: linking key program components from
 - " Florida A&M University College of Engineering Sciences, Technology and Agriculture
 - " Departments across Florida A&M University
 - " Community collaborators.
- Emphasizing participatory assessment of needs, goals, priorities in the development of conferences, workshops, training, short courses, and distance learning programs.
- Targeting the small farmer/farm worker/farm family: i.e. Hispanics, Black Americans, Native Americans, Women, and other minorities.

Internal and External Linkages

Multi-discipline Liaisons

Small animal production/efficiency, alternative crop production, herd health and food safety, sustainable agriculture, conservation and environmental management, water quality and environment education, family financial management, nutrition, diet, health education; adult and child health, and wellness; elderly care, youth development, community resource development, market technology development, export training , biological control, small farm outreach training, technical assistance, and viticulture production and management.

Multi-Departmental Liaisons

Research and Technology Department, Pharmacy, Architecture, Allied Health, Construction Engineering, Agro forestry, Adult Education, Nursing, Environmental Institute, Counseling Center, Translation services, Drama, Landscape design, Horticulture; Additional liaisons are created as needed.

Multi-Institutional Liaisons

- Fort Valley State University
- University of Florida
- USDA-NRCS

Collaborative Community Partnerships

- Florida Organic Growers Association
- Federation of Southern Cooperatives
- MAL Foundation
- Ladybug Organics
- PAEC – Migrant services
- Hispanic Ministries

- Adult Migrant and Farmworker Program
- Facilitator- Farmers (teaching/providing training)

Target Audience

The small farm population within the State of Florida is a diverse underserved and underrepresented group including African-Americans, Native Americans, Hispanics, Asians, Ethnic Europeans, Women, and other minorities.

Evaluation Framework

Narrative and numerical methods will be used to systematically examine and evaluate program results. Meta-ethnography and qualitative computer software will be used to provide insight into how the farmers are participating, rate adoption of alternative technologies/messages, participation percentages; define and determine key projects; and project effectiveness.

Progress toward established program goals will be monitored on a continuous basis. An annual report is required. As assumptions change it may become necessary to make moderate changes in established goals, but the general overall aim should be met.

Program Duration

Long term (1999-2004)

Allocated Resources

Small farm and Rural Development for the Millennium is a built-in component of several Research and Extension Projects at Florida A&M University. The resources for this program will be provided through the federal formula funds, state matching funds, and other sources. The faculty and staff projects include: 2 faculty FTEs and 2 staff FTEs, along with adequate funds for expenses and needed equipment.

Educational and Outreach Programs

- Hands-on training
- Workshops
- Field days
- Meetings
- Farmer-to-farmer capacity building
- Farmer-to-farmer conferences
- Farmer monitoring
- Distance learning opportunities
- Mentorship programs, and other
 - Participant-oriented programs