

**Agricultural Extension Service
University of Puerto Rico
Five Year Plan of Work: 1999-2004**

Period covered: October 1, 1999 to September 30, 2004.

Due date: July 15, 1999

Certification: _____

Dean and Director College of Agricultural Sciences

OVERVIEW

This plan of work covers the period from October 1, 1999 to September 30, 2004 for the University of Puerto Rico Land Grant College at Mayagüez (Puerto Rico Agricultural Extension Service –PRAES, and the Agricultural Extension Service—see attachment). This plan has a total of 284.80 FTE's for the year 2000; 265.80, for 2001, 2002; and 2003; and 264.80, for 2004.

The College of Agricultural Sciences (CAS) continued working on the Strategic Plan implementing the new mission and vision, analyzing values, searching external and internal environment, establishing strategic direction, objectives and plan of action.

Since 1998 the Deputy Director for PRAES established ten evaluation committees, each one composed by a team of employees (agricultural agents, home economists and administrators) and volunteer leaders (farmers, homemakers, 4-H and community volunteer leaders, retired employees, and others).

Each committee had the responsibility of conducting an evaluation using different scientific methodology to obtain reliable results. The committees sought input related to each committee from the stakeholders. The ten committees were:

- A. Agriculture, Marketing and Natural Resources
- B. Family and Consumer Sciences
- C. 4-H and Youth
- D. Community Resource Development
- E. Marketing
- F. Planning and Evaluation
- G. Administration
- H. Strategic Planning
- I. Volunteer Leadership
- J. Extension Organizational and Employees' Manual

Each committee conducted meetings and developed its plan of work, sought stakeholder input, and submitted a written report to the Deputy Director.

The Strategic Planning Committee analyzed the reports from all of the committees to establish the Strategic Plan for the next five years.

The presidents of each committee, advised by the Evaluation Specialist, developed a questionnaire answered by all staff members.

The committees island wide conducted focus groups, public audiences, surveys and interviews. Farmers, homemakers, 4-H volunteer leaders, personnel from other agencies, university administrators, presidents from professional associations, labor union directors, agricultural producers associations, the board of directors of the Homemakers Association, and volunteer leaders' associations (CRD and 4-H) were invited to participate in public audiences to seek stakeholder input,

especially on actual and emerging critical public issues.

Based on the reports of the committees the Strategic Planning Committee established a strategic plan. The Deputy Director, the Assistant Directors in charge of educational program, the Assistant Director in charge of Planning and Evaluation, and the Finance and Budget Officers analyzed the results and realigned the programs to address agricultural issues of critical importance.

As a result of this process short, intermediate, and long term critical issues, programs, and projects to target these issues were sought.

One example of this new redirection is the environmental program, which will be, targeted by all Extension field personnel with a total of 42.20 FTE's.

Another strategy to seek stakeholder input is through a series of meetings conducted by the Agriculture Extension Service, the Faculty of Agriculture, and the Agriculture Experiment Station staff with farmers, producers, and private commercial firms to review research and extension needs and priorities. There is at least one meeting every year for each of the ten agricultural commodities.

Personnel from local Extension offices sought their own social, economic and environmental issues that affect their clientele and under-served populations through their local Community Resource Development Committee and established priorities in the plans of work related to national goals.

Extension has continued close relations with government agencies, decision-makers, research scientists, and the clientele helping them gain insight on what has happened and what is likely to happen in the next years. The staff in the local Extension offices establishes relations with key leaders such as mayors, senators, representatives, directors and officials of organizations interested in/or related to Extension's agenda, and business people (who are invited to participate in POW Advisory Committee meetings and in other meetings of the Community Resource Development Committees) who frequently participate in Extension activities. The collaborators from the public sector are personnel from the Departments of Agriculture, Education, Health, Consumer Affairs, Labor and Human Resources, Transportation, Drug Abuse Prevention, and other government agencies (Police Department, Water and Sewer Authority, Electric Energy Authority, Fire Department, Environmental Quality Board, Soil Stabilization and Conservation Service, Forest Service, and Youth Affairs State Office) are. From the private sector there are people from banks, cooperatives, industry (agricultural, pharmaceutical, textiles, etc.), as well as religious, civic, and social leaders from different organizations. All of these people and organizations participate in the assessment process determining local needs, offering their collaboration and involving their organizations in the search of solutions to problems. Extension specialists and administrators also maintain good relations with key leaders at the state level.

New coalitions were developed the past year and new ones are expected to be established.

All personnel was trained by the Planning Office and prepared their plan of work based on clientele needs, supported by up-to-date statistical data and outlook reports, and pursuant to federal and state government public policies.

National Goals 2000

GOAL 1: An agricultural system that is highly competitive in the global economy.

Knowledge transfer will improve competitiveness in production, processing, and marketing. Due to our topography (only 50% of the island soils are fertile and suited for agriculture) it is necessary to use all technology to obtain highly productive and environmentally sound enterprises. A total of 70.65 FTE (24.81%) are devoted to this goal for the year 2000 and 70.87 (26.66%) for the next four years.

GOAL 2: A safe and secure food and fiber system.

PRAES will continue detection, surveillance, prevention, and education to ensure safe and secure food and fiber system. We will continue educating food handlers to comply with safety regulations. A total of 4.40 FTE's (1.55%) will be devoted to this goal during the year 2000; 4.07 (1.53%) during 2001; 3.90 (1.47%) during 2002; 3.64 (1.37%) during 2003; and 3.63 (1.37%) during 2004.

GOAL 3: A healthy well nourished population.

Based on vital statistics the major causes of death in Puerto Rico are related to the diet. It is necessary to continue educating the population to improve their lifestyles and reduce health risks. A total of 28.05 FTE's (25.74%) will be devoted to this goal during the year 2000; 73.84 (27.78%), during 2001; 72.98 (27.83%), during 2002; 74.29 (27.95%), during 2003; and 74.27 (28.05%) during 2004.

GOAL 4: Greater harmony between agriculture and the environment.

Water, soil, and air are resources that have been seriously affected during the past years. Extension will continue educating the population to preserve our resources. During the past years the PRAES focused on environmental issues and will continue these efforts on farm waste management, pesticides, rural aqueducts, recycling, environmental education, interior air quality, compost, soil conservation and land use.

A special project, a coalition with Americorps, assigned a group of young people to teach youngsters on environmental education focusing on the preservation of the beaches and coastline. Some 42.20 FTE's (14.82%) will be devoted to this goal during the year 2000; 22.47 (8.45%), during 2001; 22.46 (8.45%), during 2002; 22.41 (8.43%), for 2003; and 21.39 (8.08%), for 2004.

GOAL 5: To enhance economic opportunity and quality of life among families and communities.

PRAES will continue helping families to adopt a better quality of life. A total of 94.25 FTE's (33.09%) will be devoted to this effort during the year 2000; 94.55 (35.57%), for 2001; 94.59 (35.59%), for 2002; 94.57 (35.58%), for 2003; and 94.61 (35.73%), for 2004.

GOAL 1 - TO ACHIEVE AN AGRICULTURAL PRODUCTION SYSTEM THAT IS HIGHLY COMPETITIVE IN THE GLOBAL ECONOMY

STATEMENT OF ISSUE(S)

The total agricultural gross income for the fiscal year 1997-98 was \$708.3 million. The agricultural sector employs 31,000 to 33,000 people directly and 62,000 indirectly. This represents 3.5 % of the total working force and the 1.1 % of the National Gross Income. During fiscal years 1996-97 the agriculture sector was greatly affected by Hurricane Hortense and a strong drought. In September 21, 1998 Hurricane Georges hit the whole island. The damage inflicted to local agriculture was severe. The losses were estimated in \$308 million in crops, livestock and facilities. The projected farmer's income for fiscal year 1998-99 was reduced to \$587 million from the \$720 million forecasted before the hurricane.

In short term, the damages have been significant. The losses were quantified and farmers applied for insurance coverage and relief assistance that covered much of the losses. The farmers are highly optimistic, as this sector is poised to bounce back and become stronger than ever.

DAIRY:

The dairy industry is the most important agricultural commodity, contributing to approximately 28.1 % of the total agricultural gross income. During fiscal year 1997-98, the total production was 374,703,000 quarts of milk, produced by 420 dairies throughout the island, with the greater concentration of them in the northern part of the island. Producers received \$199,096,000, and agricultural gross income was \$708,274,000.

Milk production in the tropics is a challenge due to limiting factors. Uneven rainfall patterns affect the availability of uniform dry matter and fiber, and high temperatures and humidity affect management, health and reproduction of dairy cattle. High dependency of feed concentrates to compensate for poor quality forages due to adverse tropical conditions and restrictive requirements of regulatory agencies result in increased costs of milk production.

FORAGE:

The biggest income contribution of the forage industry is mainly due to the consumption of the forages by other livestock products, such as milk (57.9%), beef (5.4%) and horse feeding (1.4%). During fiscal year 1997-98, 850,000 bales of hay were produced with a farm value of \$2.23 million. A reduction of crop lands has created the need for more intensive and efficient production practices. There is an increasing trend in the production and use of conserved forages to supply feed to grazing animals. Around 78% of dairy farms use hay for their cattle during dry spells when pastures yields and quality are lower. In recent years, many farms have established silage and haylage production practices and use them for to feed their livestock. These products are expected to supply the needs for high quality fiber in animals. To achieve this, the use of grasses and legumes with high yields and quality should be researched and established in farms.

BEEF:

During fiscal year 1997-98, production reached 42.4 millions pounds, with a farm value of \$35.4 million. The total beef consumption is 135 million pounds. The local beef production represents 26% of the total consumption, the other 74% is mainly imported from the United States. Imports from the United States and Central America are sold locally at low prices resulting in a decrease in the local production during the past years. To increase the market participation a number of management practices should be used to improve the productivity per cuerda (0.97 acres).

Among these practices are those related to nutrition, breeding, forage use, prevention and control health programs, bookkeeping, and marketing. Other factors are consumption habits and awareness of beef consumption and heart diseases. There is market for local production but it depends on marketing practices and production efficiency.

POULTRY:

Poultry production is represented by two commercial sectors, broilers and laying hens. There is a third sector that is related to gambling: fighting cocks. Broilers and laying hens are the second sector of economic importance. For fiscal year 1997-98, it contributed with 17.5% to the agricultural gross income, with a value of \$124 million. The local broiler production is 49% and laying hens is 51% of the total consumption.

This enterprise has changed during the past 10 years due to technological changes in production and marketing. The damages caused by Hurricane Georges to poultry houses contributed to restoration and new designs of houses. The local production is being challenged by imports, which are marketed at lower prices. During the past years importers have appealed in court Poultry Regulations 3 and 8 which regulate marketing of eggs and chicken. At present, the regulations are more fair for importers and local producers.

A third processing plant began operations on December 1998. It is expected to increase the local broiler market and competition. Factors like imports, price and consumption habits should be considered to analyze future production increases.

SWINE:

During fiscal year 1997-98, swine production was of 25.9 million pounds, with a farm value of \$25.05 million, representing 28.2% of the total consumption. The main reason to have a small portion of the market is the lower cost from imports that is passed to the customers. This sector faces several limitations such as deficient structures, poor management and marketing practices, diseases, poor breeders, and waste management disposal practices. Another limitation is consumption habits. Swine meat is considered by the majority of the population as dangerous to health and a contributor to heart disease. Good management practices will reduce costs making local production more competitive.

In order to improve the producers' efficiency and the consumers' demand it is strictly necessary

to continue the education in the transfer of new technologies to farmers and provide updated nutrition information to consumers. This will improve the economic and growing markets.

AQUACULTURE:

During fiscal year 1997-98, aquaculture production was 675,000 pounds with a farm value of \$2.97 million. The local climate and topographic conditions make this sector very attractive to small farmers. The production requires small land extensions. It is preferred to use non-productive land to operate. The aquaculture sector has been of great interest for farmers as an inter-crop, representing another source of income.

Aquaculture is gaining momentum among farmers, with approximately 120 small farmers. To develop this sector more technical information is needed about management practices and marketing.

COFFEE:

The coffee industry is the most important sector among crops. During fiscal year 1997-98, 232 hundredweight were produced with a farm value of \$225 per hundredweight. The per capita consumption has dropped during the past 20 years from 14 to 8 pounds. The last harvest represented 73.2% of the total coffee consumption. This sector employs 10,000 workers (32% of the total agricultural work force). In the mountain area there live 200,000 people. Coffee plantations cover 65,000 acres of mountains, where the soil is acid and low in nutrients and organic matter. The main problems are low production, high production costs, low retribution, inadequate waste disposal practices, a small work force, poor coffee quality, and late adoption of technological practices.

Coffee is one of the few agricultural products in which the island is self-sufficient. Hurricane Georges affected 60% of the coffee bean harvest and 70% of mature coffee trees. Young coffee trees, which retained their beans will be saved if they are reconditioned. To meet the local demand the Department of Agriculture authorized imports from Costa Rica and the Dominican Republic. Extension work will focus on the rehabilitation of this commodity.

SUGARCANE:

Sugarcane is mainly harvested in the west and southeast valleys of Puerto Rico. This crop uses approximately 22,000 acres of land for its cultivation. There are two sugar processing factories Coloso, in Aguada, and Roig, in Yabucoa, and a sugar refinery at Mercedita, in Ponce. The last sugarcane harvest season used 6,354 acres of land. The climate, soils, and technology are ideal to produce enough sugar for the local market. When the proper technology is used, yields are 30 to 50 tons of cane per cuerda (1 cuerda = 0.97 acre). The 1998-99, production decreased by 79.2 % percent. The reduction was due to damages by Hurricane Georges to the Roig sugar mill and cane fields. During this sugar season, 70,346 tons were harvested, yielding 3,268 tons of raw sugar and 400,000 gallons of molasses.

The sugar industry generates about 2,000 direct jobs during the season. The value of the sugar

and molasses for fiscal year 1998-99 was \$1.87 million at farm value. To meet the consumption demand for house and commercial use, 96,732 tons of raw sugar are imported annually. The problems this sector faces are low yields of sugar per ton, high production costs, and competition for the use of land.

VEGETABLES:

The starchy vegetables sector includes plantains, bananas, yams, taniers, sweet potatoes, cassava, root celery and dasheens. These crops are mainly cultivated in the highlands area of the island. On the south coast there are plantations of plantains, banana, taniers, and sweet potatoes using irrigation. The average capacity of each farm is about 20 acres. This sector generates 5,000 direct jobs. During fiscal year 1997-98 this sector generated \$62.4 million. Plantains are the most important starchy crop.

The island is self-sufficient in plantains and bananas. Yams, taniers, sweet potatoes, cassava, root celery, and dasheens are imported to meet the local demand. The imports are sold at lower prices, resulting in an unequal competition between imports and local production. The low yield per acre and damages suffered by diseases and pest, in addition to seasonal crops and deficient marketing and post harvesting practices are limiting factors for their development.

Plantain plantations sustained the second largest loss caused by Hurricane Georges. Eighty per cent (80%) of the production of plantains and bananas were affected. To meet the local demand the Department of Agriculture has authorized imports from Venezuela, Panama, Costa Rica, and the Dominican Republic. Extension work will be focus on the rehabilitation of this commodity.

The vegetables and leafy sector is the most active and the one that uses most intensively the economical resources. It uses the latest technological resources available for production. The income for fiscal year 1997-98 was \$22.53 million. The main crops of this sector are pumpkin, tomatoes, peppers, and onions, which have the highest economical importance. In second place are bell peppers, okra, sweet pepper, watercress, chayote, cilantro, spiny coriander, cabbage, cucumber, and eggplant.

The farmers that use the latest technology are located in the southern part of the island and the farm side covers 29.14 acres. The other vegetable farmers are spread around the island. The average farm size is 5.83 acres.

New trends have been implemented in the vegetable production. The use of hydroponic systems has increased during 1998. The major crops produced are cilantro, leafy lettuce, tomatoes, eggplant, and cucumbers.

Onions, tomatoes, and cabbage are imported mainly from the United States. While pumpkin, sweet pepper, cucumber, and peppers are imported from the Dominican Republic. Ninety percent (90%) of the local production of tomatoes and 10% of onions are exported during the winter season to the United States. The vegetables most consumed are tomatoes, onions, pumpkin, and peppers. The local production supply's the total demand of cucumber, eggplant,

and okra. The main problems this sector faces are pests and diseases, which reduce yields. Fertilization and adequate marketing channels have to be emphasized for the success of the commodity. Merchandisers demand that products be classified, graded, and packed to enter the local market and compete with imports.

FRUIT:

The fruit sector is represented by mangoes, pineapple, oranges, avocados, papaya, coconuts, citrons, passion fruits, water melon, honeydew and cantaloupe. The value for these crops for fiscal year 1997-98 was \$36.44 million, representing 5.15% of the total agricultural gross income.

Other fruit that are increasing demand are soursop, limes, Spanish lime, sapodillas, West Indies cherries, tamarind, guavas, mamey sapote, and star fruit. However, as these fruit have a short life span and are more susceptible to diseases production tends to be low.

The high demand for fresh fruit, as well as processed, has created the need for imports. The main imports of fruit are from the United States, particularly fresh, frozen, dried, and canned fruit, jellies, and juices. From the Dominican Republic imports consist of fresh avocados, oranges and coconuts.

Another trend in this sector is the export to the United States and Europe of more than 27.8 million pounds of mangoes, citrons, and guavas annually. The main problems of this sector are low yields per acre, diseases, pests, and poor fruit quality. Better managing practices should be established and chemical agents should be used to control pests and diseases.

GRAINS AND LEGUMES:

Grains and legume production represents a small portion of the total consumption. For fiscal year 1997-98, the economic value was \$1.8 million. The production of pigeon peas and beans decreased during the past year, but corn production increased due to feed formulation for livestock. The per capita consumption has decreased in the past years. The demand exists, but it depends on how competitive the products are against imports.

Another trend in the grains and legume sector is the production of genetically improved seeds during the winter season. There are 12 companies producing seeds, these companies plant 1,883 acres every season. The main crop is field corn, followed by soybean, sorghum, sunflower, peanut, and cotton. The success of this enterprise depends on low production costs and the use of modern technology and equipment, as well as marketing and coordination between producers and elaborators.

ORNAMENTAL PLANTS:

Ornamental plants contributed with \$34 millions to the agricultural gross income during fiscal year 1997-98. This sector is characterized by exports, which increase annually. The primary

export market is the United States, followed by Virgin Island and Foreign Countries. This sector has four marketing channels: exports, retail, wholesale delivered outside the farm, and wholesale delivered to the farm. The local production is composed of foliage, grass, cut flowers, trees and shrub trees, bulbs and roots, and orchids.

OTHER LIVESTOCK:

The agricultural sector has other enterprises like honey bees, sheep, goats, horses, and rabbits, each of which contribute with less than a million dollars per fiscal year. These commodities are in the development process, but should be organized and new marketing channels identified.

KEY PROGRAM COMPONENT(S)

The agricultural sector faces a series of challenges related to production, marketing, and safety. To deal with this several activities will be developed and offered to the public. One of the methods to provide information in an organized way is through training. The training will be on several topics, such as the use of safety equipment and personal protective equipment, proper use of pesticides, health and occupational safety laws, and safe use of agricultural machinery. These trainings will be offered to agronomists, farmers and crop producers. Different means of communication will be used such as radio, newspapers, brochures and electronic mail. In addition, and as part of the training methods, demonstrative farms and field tests will be established.

Another strategy to help face agricultural challenges is to develop technical guides in management and marketing practices. Also the College of Agricultural Sciences will coordinate and develop research activities, and will be responsible to implement the program and divulge research results. For marketing purposes, product classification and packaging techniques will be established.

Several ideas will be developed to ensure the quality of products is enhanced. One of them entails the utilization of genetically improved plants to increase yields and make them resistant to pests and diseases. A weed control program will also be established, along with an effort to emphasize soil and environment protection. Furthermore, superior breeders will be imported to introduce superior traits. New structural designs for breeding farms will be used to improve efficiency and management. Seminars will be offered to improve product quality, involving both government and private sectors.

INTERNAL AND EXTERNAL LINKAGES

Various collaborators will work in the development and implementation of strategies and ideas that will help face agricultural challenges. They can be divided in two sectors, internal and external collaborators.

Internal Collaborators:

The Department of Agriculture will help with technical assistance and incentive programs. The Natural Resources and Conservation Service will help in the implementation of practices to save the natural resources and the environment.

Personnel of the College of Agricultural Sciences, the Agricultural Extension Service, the Agricultural Experiment Stations and the Sea Grant Program will help with trainings, research and information sharing.

External Collaborators:

The Department of Labor will be a key contributor in divulging information regarding labor laws and the importance of safety at the work place.

The private sector will also contribute as part of this effort, among them various associations, food importers and distributors, as well as food processors and farmers. The United States Department of Agriculture will also be part of this challenge by contributing its technical knowledge and research information.

Several proposals will be submitted to the Southern Agriculture Research and Education (SARE), in livestock management disposal, to Rangeland Research Grant Program, and to McInter Stains for germplasm storage and production. Other external collaborators from which help will be asked are the Animal Industry Department of the University of Florida, the Caribbean Basin Administrative Group (CBAG), and the National Science Foundation.

TARGET AUDIENCES

The target audiences include farmers and personnel, agricultural entrepreneurs, packers, 4-H members, members of agricultural and professional associations, people from the private sector, and personnel from agencies such as the Department of Agriculture, the Natural Resources and Conservation Service, and the College of Agricultural Sciences. Handicapped and veterans are other under-served population to be targeted.

EVALUATION FRAMEWORK

Formative Evaluation

An ongoing formative evaluation will be conducted to assess whether the project is being conducted as planned. During the life of the project (5 years) annual formative evaluations will identify which of the project activities need to be modified or deleted prior to the summative evaluation. Formative evaluations will also assess progress in meeting the project's goals. It will collect information in order to learn whether or not the benchmarks of participant progress were obtained and to point out unexpected developments. Additionally, formative evaluation will collect information to determine what the impact of the activities and strategies is on the participants at various stages of the intervention. Data conducted as part of the formative evaluation will form the basis for a summative study, which will be conducted at some future date. The Bennett Hierarchy for program evaluation will be utilized to assess the impact of the project.

Summative Evaluation

Results of the pre-test and post-test scores will be utilized to estimate the success of the project in fostering change in attitude, skills and aspirations on new agricultural practices. The summative evaluation will include follow-up on participants in order to corroborate that adequate agricultural practices are being utilized over time. The following evaluation design describes the process of administering a pre-test (T1) to a group of participants in the training (X1) will receive a post-test (T2) to determine the change.

Evaluation Design

Random	Pre-test	Training	Post-test
YES	T1	X1	T2

Evaluation Summary

QUESTION 1. What are the Reactions of Participants toward the training?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
Is the curriculum appropriate for the target audience?	*Curriculum Reviews *Interviews	Staff Participants	Formative	1 & 2
Are participants getting involved in the project?	*Observations *Attendance *Focus Groups	Participants Staff	Formative	3
What is the level of satisfaction with the training?	*Interviews *Focus Groups	Participants	Formative Summative	4

QUESTION 2. What is the level of attitude, skills, and aspirations of participants regarding the adoption of adequate agricultural practices?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
What is their level of attitude?	Survey	Participants Staff	Formative Summative	5
Are participants getting involved in the project	Observations	Participants Staff	Formative Summative	5
What is their level of aspirations?	Survey	Participants Staff	Formative Summative	5

QUESTION 3. What is the level of adoption of agricultural practices among participants of non-formal education training?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
Have participants developed interest in the recommended practices?	*Interviews *Observations *Focus Groups	Participants Staff	Formative Summative	6
Are participants planning to adopt the recommended practices?	*Interviews *Observations *Focus Groups & Case Studies	Participants Staff	Summative	6
Have participants adopted the recommended practices?	*Interviews *Observations *Focus Groups & Case Studies	Participants Staff	Summative	6

OBJECTIVES, PERFORMANCE GOALS, AND INDICATORS

OBJECTIVE 1

To produce new and value-added agricultural products and commodities.

PERFORMANCE GOAL 2

To annually increase agricultural producer awareness, understanding, and information regarding the production of new and value-added commodities and products in U.S. agriculture in which CSREES partners and cooperators play an active research, education, or extension role.

INDICATOR 1

The total number of persons completing non-formal education programs on production of new and value-added commodities and products and the number of these persons who actually adopt one or more recommended practices or technologies within six months after completing one or more of these programs.

Year	Indicator 1A (Output)		Indicator 1B (Outcome)	
	Target	Actual	Target	Actual
2000	1286	0	235	0
2001	1316	0	243	0
2002	1343	0	252	0
2003	1372	0	257	0

2004	1374	0	261	0
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OBJECTIVE 2

To increase the global competitiveness of the U.S. agricultural production system.

PERFORMANCE GOAL 2

To increase agricultural producer awareness, understanding, and information on improving the productivity and global competitiveness of the U.S. agricultural production system in which CSREES partners and cooperators play an active research, education, or extension role.

INDICATOR 1

The total number of persons completing non-formal education programs to improve the productivity and global competitiveness of the U.S. agricultural production system and the number of these persons who actually adopt one or more new production techniques or strategies within six months of completing one or more of these programs.

Year	Indicator 1A (Output)		Indicator 1B (Outcome)	
	Target	Actual	Target	Actual
2000	20066	0	11216	0
2001	20461	0	11517	0
2002	20828	0	11955	0
2003	21106	0	12264	0
2004	21403	0	12621	0

OBJECTIVE 4

To improve decision-making on public policies related to the productivity and global competitiveness of the U.S. agricultural production system.

PERFORMANCE GOAL 2

To annually increase the effectiveness of constituent and citizen participation on public policy issues affecting the productivity and global competitiveness of the U.S. agricultural production system.

INDICATOR 1

The total number of persons annually completing non-formal education programs on topics related to public policy issues affecting the productivity and global competitiveness of the U.S. agricultural production system and the number of those persons who make use of such knowledge within six months of completing one or more of these programs.

Year	Indicator 1A (Output)		Indicator 1B (Outcome)	
	Target	Actual	Target	Actual
2000	986	0	400	0
2001	978	0	406	0
2002	1007	0	418	0
2003	1000	0	423	0
2004	1015	0	424	0

PROGRAM DURATION

Long Term (5 years)

ALLOCATED RESOURCES

Fiscal Year	Resources			
	State	Federal	Others Federal	Total
2000	3,311,263.42	2,017,417.55	296,200.00	5,624,880.97
	165,563.17	4,034.84	8,886.00	178,484.01
2001	3,476,826.59	2,021,452.39	305,086.00	5,803,364.98
2002	3,642,389.76	2,187,015.56	470,649.17	6,300,054.49
2003	3,807,952.93	2,352,578.73	536,212.34	6,796,744.00
2004	3,973,516.10	2,518,141.90	801,775.51	7,293,433.52

Estimated FTE Commitment

Year	Professional			Paraprofessional		
	1862	1890	Other	1862	1890	Other
2000	70.65	0.0	0.0	0.0	0.0	0.0
2001	70.87	0.0	0.0	0.0	0.0	0.0
2002	70.87	0.0	0.0	0.0	0.0	0.0
2003	70.87	0.0	0.0	0.0	0.0	0.0
2004	70.97	0.0	0.0	0.0	0.0	0.0

EDUCATION AND OUTREACH PROGRAMS

PRAES has developed two agricultural programs in the crop and livestock areas. These programs are composed by two commodities: 1) crops which includes coffee, sugarcane, starchy vegetables, fruit, grains and legumes, and ornamental plants; and 2) livestock which includes honey bees, aquaculture, poultry, goats and sheep, horses, swine rabbits, beef, dairy cattle and forage.

The Extension county agents, through the educational and outreach programs, will transfer new technology developed by the Agricultural Experiment Station to farmers and the general public. County agents will use mass media communications, farm demonstrations, leaflets, brochures, and short courses to disseminate the information to the public.

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GOAL 2 - A SAFE AND SECURE FOOD AND FIBER SYSTEM.

STATEMENT OF ISSUE(S)

The assurance of an adequate food supply has two major components: (A) the need of food supplies for the whole island, and (B) the need of affordable foods to meet the needs of individuals and families.

A. FOOD SECURITY-SECURITY OF SUPPLIES

Agriculture was the basis of the economy of Puerto Rico until the 1950's. Since then, the contribution of agriculture to the gross income has declined drastically. According to the Economic Report to the Governor for 1996, agriculture represents only 0.67% of the internal gross product. Some of the principal causes of this decline are:

a. The accelerated industrial and commercial growth has created a barrier to agricultural improvement. Because of its use for the construction of houses, industry and commercial centers, the amount of land available for agriculture has declined. In 1952 there were 1,849,379 acres of agricultural land, while in 1994 there were only 1,245,648. This reflects a loss of 14,560 acres of agricultural land annually.

b. Puerto Rico has an accelerated population growth and is one of the most densely populated countries in the world. The island is 3,435 square miles of land with a topography that is mostly mountains. In 1994, the population was 3.7 million (about 1,000 persons per square mile and 3.0 persons per acre of appropriate agricultural land). It is expected that in 2025 the population will be 4.7 million.

The agricultural crisis in Puerto Rico has forced the island to import 70% of the food from the United States. However, the population of the United States and the rest of the world is also growing in a similar way to that of Puerto Rico. This means that in the future the supply of food will be less and the prices higher.

Normally, the island has a food supply backup of twelve days. Food security in Puerto Rico could be affected by an emergency (war, major disaster, change in public politics, etc.) involving the United States and the subsequent reduction of food exports to Puerto Rico. If that happens, hunger would occur. As food supplies in stores are adequate, consumers are virtually unaware of the problem. The government and the people are not prepared to affront such a crisis.

This situation indicates that it is indispensable that local food production be increased in a competitive manner. This includes not using agricultural land for housing or commercial purposes. Therefore, it is necessary to create awareness within the government at state and local levels and with public and private entities of the urgent need of increasing agricultural production for the stability and development of Puerto Rico. It is especially important to get this message across to children, who in the future will be the most affected if our agriculture continues diminishing.

References:

Commonwealth of Puerto Rico, Department of Agriculture. 1996.

Facts and Figures on Agriculture in Puerto Rico. Office of Agricultural Statistics. San Juan, PR. 128 pp.

Vicente-Chandler, J. 1994. *Una Agricultura para los 90 e Inicios del 2000. Departamento de Agricultura de Puerto Rico, Oficina del Secretario.* 133 pp.

Burgos, N., L.H., Olmeda, y J.A., Castañer. 1997. *Apéndice Estadístico, Informe Económico al Gobernador, 1996. Junta de Planificación.*

FOOD SECURITY:AFFORDABILITY

Puerto Rico as a territory of the United States benefits from USDA federal food and nutrition assistance programs (Food Checks, Child Nutrition Programs, School Lunch and Breakfast Programs, the Supplemental Nutrition Program (WIC), and others) to assure children and low income families access to a healthy diet. According to Socioeconomic Indicators by Municipality of the Puerto Rico Planning Board (1993), more than 45% of the population of Puerto Rico (490,813 families and 1,413,539 individuals) receives government checks from the Nutritional Assistance Program (NAP, known in Spanish as PAN) to enable them to buy food for their families. These checks can be used for whatever needs the family has. Thus, it becomes imperative for families to receive adequate education regarding the use of affordable and nutritionally appropriate foods by using the Puerto Rico Food Pyramid as a basis for their selection. This education should extend skills already acquired by the participants.

According to the Puerto Rico Department of the Family, the money available to low-income families is minimal to provide an adequate diet.

In October of 1998, PRAES initiated a project with a food security affordability component to help low income families become more conscious of food security by improving their use of available funds. These people will attend a short course dealing directly with the issues of food affordability including menu planning, food selection and buying practices, as well as the use of gardening and buying food directly from farmers.

References:

Belenky, M. F., B. M. Clinchy, N. R. Goldberger, and J. M. Tarule. 1986. *Women's Ways of Knowing.* New York: Basic Books.

Meléndez Reyes, Z, M. Díaz Díaz, e I. Roche Morales. 1993. *Indicadores socioeconómicos por municipio.* Gobierno de Puerto Rico, Oficina del Gobernador, Junta de Planificación.

Macpherson de Sánchez, A. 1994. *Informe del Sub-Comité y Evidencia que Sustenta las diferencias entre la Piramide Alimentaria para Puerto Rico, la Piramide Guía Alimentaria (DAEU) y la Guía Alimentaria para Puerto Rico. Comité de Nutrición, Subcomité para la Piramide Alimentaria para Puerto Rico.*

B. FOOD SAFETY:FARMER, WHOLESALER, AND RETAILER

Medical costs and productivity losses for specific pathogens in food have increased. PRAES joined the USDA commitment to build a safe handling of meat, poultry, and egg products program based on the Hazard Analysis and Critical Control Point (HACCP). We plan to initiate education directed to meat, poultry, and egg harvesters in relation to the assessment of risk of pathogens, and chemical residue hazards that might contaminate our local food supply.

In recent years mutations of microorganisms, such as the capacity of salmonella to cross the outer membrane of the egg and the finding of Cyclospora in fruit that were rinsed, have increased the health threat to consumers from foodborne diseases. In the case of *E. coli* 0157:H7 the number of organisms necessary to cause illness is greatly reduced. This dictates changes in practices that were previously adequate to make tighter control of contamination possible. The situations cited above indicate a need for closer monitoring on the farm, wholesale, and retail levels, as the methods applied after the food is bought for final use may not be effective in preventing problems. Other farm, wholesale, and retail based problems include use of antibiotics, disinfectants, hormones, and pesticides at the farm, wholesale, or retail level. Besides microorganisms (bacteria, viruses, fungi, and parasites), food may become contaminated with heavy metals, preservatives, or other types of contaminants. Insects, rodents, or other animals such as birds, dogs, etc. may contribute to the contamination of foods on the farm or in the transport, packaging, storage, etc, of products in route to and at the wholesale or retail market. Thus, it is necessary to educate farmers, wholesalers, and retailers about food management skills leading to less contaminated and better quality foods.

FOOD SAFETY:INTEGRATED PEST MANAGEMENT (IPM)

Our agricultural production has become more intensive and specialized as a result of an increase in consumer demand for fresh agricultural products, high competition in the market and more cost effectiveness by farmers. IPM systems can help restore the environment and provide alternatives on more effective pest control to improve yield, quality and safety of food and fiber. IPM strategies will emphasize areas of impact such as safe pesticide use in the farm and control of pests in homes and food service establishments.

The purpose of training in IPM strategies is to orient new or reassigned staff personnel as to job responsibilities, to maintain and enhance performance of the participants and to develop skills and understand the application of new technology. According to FDA's evaluation on food safety standards, 80% of the establishments have poor compliance of pest management strategies; therefore, IPM will emphasize areas of impact such as households, food service

establishments, and others.

FOOD SAFETY:MASTITIS PREVENTION PROGRAM

Although the milk industry in Puerto Rico is in full compliance with FDA/IMS Sanitary Standards, mastitis (an inflammation of the cow's mammary gland) is still a concern at the farm level where management, weather and climatic elements sometimes play an important role in the development of the disease. Statistics from the Puerto Rico DHIA (Dairy Herd Improvement Association) and Puerto Rico Dairy Health Project, show that Somatic Cell Counts (a milk quality parameter) in Puerto Rico still averages above 400,000 cells/ml. This suggests, according to research, that about 40% of our milking cows may have some form of mastitis, requiring treatment with intramammary infusions either during lactation or the dry period.

FOOD SAFETY:CONSUMERS AND FOOD EMPLOYEES

The new lifestyles compel consumers to eat more than one meal away from home or buy prepared meals for consumption at home. According to the CDC, about 80% of the outbreaks were associated with meals served in commercial and institutional food services. The Puerto Rican food service establishments are characterized by inadequate food handling practices. The Food and Drug Administration has evaluated this situation. They found an average marginal score of 65 in their inspections. The conditions of foodservice establishments in Puerto Rico have placed the consumers at high risk to get food borne illnesses. On the other hand, approximately 20% of the food borne illnesses result from inadequate food handling practices at home. Food employees and consumers need to know the most important pathogens in foods and that foods can be contaminated during any step of the food chain: producers, processors, retail sales, and home. Although zero risk of food contamination is not possible, over 90% of cases could be avoided if people handled foods according to recommended practices.

Consumers. The PRAES plans to continue coordination with federal and state agencies throughout the Food Safety Education Partnership (FSEP) initiated last year in Puerto Rico. The goal of this partnership was to reduce the incidence of foodborne illnesses through education emphasizing on the public and personnel of agencies serving meals to high-risk clientele. The FSEP plans to continue the celebration of the National Food Safety Month and the "Fight BAC!" Campaign. The purpose is to prepare and provide food safety information to the public. State and local agencies personnel, civic and professional organizations, and volunteers from the Family and Community Education Association collaborate in this effort. The educational materials prepared by the FSEP will be used by PRAES home economists and agencies personnel to offer short courses to consumers.

Puerto Rico is in a high-risk zone for hurricanes mainly between July and November. PRAES developed a special educational material named "Fight BAC! After Floods and Blackouts". PRAES personnel at local level will offer this education through short course, mass media community resources during this season.

Children and Youth. Children and youth are at high risk to get foodborne illness. Last year the

project “Los Chef del Futuro” (Chefs of the Future) integrated the food safety component. This is a 5-lesson course and competency activities designed to initiate children and youth in the art of healthy and safe food preparation in which participants learn and practice safe food handling procedures.

Food Employees (12- lesson certification course). PRAES collaborated with the Puerto Rico Department of Health, Environmental Health Secretariat (PRDH-EHS) in their commitment in the legislature of Puerto Rico to revoke the 1946- food hygiene regulation and adopt the FDA Food Code as a law. This new law for Puerto Rico requires that every person in charge of food establishments should approve a Food Safety and HACCP Certification Course. PRAES is the only provider that offers this certification course gratuitously and through the sponsorship of USDA-CSREES Plan of work project. The course was developed during the USDA-CSREES Sponsored Project No. 97-EFSQ-1-0096.

Institutional Food Employees (4-lessons course) - The administrative and professional personnel of several institution need food safety training’s: Family Department, Education Department, Governors Office for Elderly Affairs, Supplementary Nutrition Special Program (WIC), and others. These institutions have limited food safety expert’s personnel and have requested training from the PRAES and the Food Safety Education Partnership. This training will increase in the institutional personnel the awareness, understanding, and information on food safety, foodborne risks and illnesses that they will transfer to their clientele and food employees of their different diurnal and home care services.

PRAES Home Economists plan include the offering of food safety course to FOOD EMPLOYEES working in food service institutions that serve meals to vulnerable groups. The curriculum used was developed in the project num. 96-EFSQ-1-4171, sponsored by USDA-CSREES. This course called “Decisiones seguras en el manejo de alimento” consists of four lessons and a Quality Improvement Program using the HACCP principles.

FOOD SAFETY & QUALITY(Competitive):HACCP PLANFOR FISH AND SHELLFISH
(P. Code: L.U.3, Number assigned by OEP: 1999-04503)

Seafood caught in Puerto Rico is prone to a number of safety problems. The Center for Disease Control (CDC) reports that 49% of all seafood-related illnesses came from four States/territories headed by Puerto Rico. Most of the fishermen go to sea on a daily basis or for several days. Often they do not take enough ice to maintain fish under 41°F. The environment, in which fish are stored on board, is unsanitary and this situation is further aggravated because the fish is put on the ground. Fish, oysters and clams are sold to consumers through road vendor who display and expose the product to tropical ambient temperatures for hours. Locally caught fishery products are usually transported with little or no refrigeration.

A project was prepared to design and develop a training curriculum on Food Safety and HACCP to improve the ability of the small-scale fishermen, fish and shellfish harvesters and processors to make informed decisions, and to provide them with the tools and assistance necessary to

develop their HACCP plans related to handling of fish or shellfish in a responsible and safe manner.

KEY PROGRAM COMPONENT(S)

Food Security-Security of Supplies:

Develop a 5-session course for youth and 4-H to help them understand the source of foods, the options of land use and its implications, and the importance of sustainable systems of agriculture.

Agronomists will establish or support farmer's markets, organized groups or cooperatives, to expand access to affordable nutritious local food supplies.

PRAES professional personnel will offer short courses to teach the public, teachers, and school children about the importance of agriculture in general and local agriculture in particular.

Food Security-Security Affordability:

Implement a healthful diet information project (MeNu) directed to individuals and needy families to raise awareness and to promote the better use of food checks and other food programs.

Use a short course based on Belenky *et al.*, and behavior modification techniques. In addition to the short courses, social marketing will be done using talks to community groups, newsletters, bulletins, exhibits, radio, TV, bulletin boards, and other activities of mass marketing. Nutrition coalitions will be strengthened at community level.

Food Safety-Farmer, Wholesaler, Retailer

Develop short courses to inform meat, poultry, and egg producers, processors, wholesalers, and retailers about food safety and their responsibilities related to the products with which they work.

Develop a HACCP project directed to fish and shellfish harvesters and processors (pending for approval of USDA-CSREES competitive proposal).

The staff personnel will be trained.

Food Safety-Integrated Pest Management

Training in pest identification and alternative control measures offered to Extension Food Specialists, nutritionists, and home economists so they can orient the clientele.

Several methods will be used to achieve and transfer pest control information: training meetings, short courses, seminars, develop Extension publications, educational materials, radio and TV programs, and develop an IPM database program. The IPM program will reach the audience through meetings and contacts with other agencies, mass media, circular letters, and articles to journals and the press. The office of the IPM Coordinator will prepare a checklist and surveys with the help of the specialists and the Extension Evaluator to evaluate the adoption of IPM strategies in selected program areas.

Food Safety-Mastitis Prevention Program

Farm visits to train dairy farmers on mastitis management and quality milk production; create awareness of the importance of proper antibiotic use to prevent, and contamination of raw milk. Materials and slide sets have already been prepared for this purpose. A close interagency coordination is maintained with law enforcement agencies like the Departments of Health and Agriculture.

Food Safety-Fish and Shellfish

Partners for this project will prepare a curriculum designed for fish and shellfish harvesters and processors and train PRAES agronomists, Food Science Technology Program (FSTP) Graduate Students, and Puerto Rico Department of Health, Environmental Health Secretariat (PRDH-EHS) Inspectors to use the curriculum to train small-scale aquaculturists and fishermen. The Puerto Rico Agricultural Experimental Station will collaborate in the identification of hazards and FSTP students will assist in developing and implementing the HACCP Plan.

Food Safety-Consumers and Food Employees

Continuing the coordination of the Food Safety Education Partnership between the government, industry and academia to develop a public education campaign to reduce the risk of food borne illnesses.

Prepare educational material for consumers by using as reference material received from national level for the celebration of National Food Safety Month and the “Fight BAC!” Campaign. All material received from the USDA/CSREES and collaborators needs to be adapted to the idiosyncrasies of the Puerto Rican culture and translated to Spanish.

Home economists will establish a partnership committee at local level, offer food safety short courses to consumers, and continue offering the “Los Chef del futuro” food safety and food preparation course and competition for children and youth.

Food Handlers Certification Course (12 lessons)

The project team will train-the-trainers, PRAES Home Economist, and PRHD-EHS Inspectors, to offer the food safety and HACCP certification course to persons in charge and employees of food establishments. PRAES home economists make initial visits to restaurant facilities to recruit persons in charge and food employees and to make a pre-evaluation of the facilities. They will offer the twelve lessons about food safety and HACCP certification course. Later, they visit the facilities to make post-evaluations of HACCP compliance and the PRDH-EHS Inspectors will make inspections.

Institutional Food Employees:

The Food Safety Education Partnership experts on food safety and HACCP will train professional personnel of institutions that serve food to high-risk clientele.

PRAES home economists at local level will offer food handlers a 4-lesson course (“Decisiones seguras en el manejo de alimentos”) to persons in charge and employees of institution that serve food to high risk clientele. Later they will visit the facilities to evaluate if an HACCP plan was established and followed to control hazards and risk of foodborne illnesses.

INTERNAL AND EXTERNAL LINKAGES

Internal

Food Security-Security of Supplies:

Agricultural Specialists of Specific Subject Matter Areas

Soil Specialist

4-H Specialists

Agronomists and Home Economists

Researchers of the Puerto Rico Agriculture Experiment Station

Faculty of the Agricultural Economics and Rural Sociology Department of the College of Agricultural Sciences at the Mayagüez Campus of the University of Puerto Rico

Food Security-Security Affordability:

Food and Nutrition Specialists

Home Economists

Food Safety-Farmers, Wholesaler, Retailer:

PRAES Personnel:

Aquaculture Specialist

Agricultural Specialists of Specific Subject Matter Areas: Meat, Poultry and Eggs

Agronomists

Personnel from the Mayagüez Campus of the University of Puerto Rico

Seafood Products Specialist & Extension Agent, SEA GRANT

Professor in Marine Sciences

Professor in Food Microbiology

Agricultural Experiment Station: Food Technology Laboratory

Food Science and Technology Program

College of Art and Sciences

Microbiology and Marine Sciences

Food Safety-Integrated Pest Management (IPM):

PRAES Specialists

Extension IPM Coordinator, Entomology Specialist, Agronomist and Home

Economists/Nutritionists, Crop Protection Department, Agricultural Experiment Station personnel.

Food Safety-Mastitis Prevention Program:

PRAES Personnel:

Evaluator of AES

Editors and support personnel from Extension Media Office

Extension Dairy Specialists and Agents

Food Safety-Consumers and Food Employees:

PRAES Specialists:

Food and Nutrition Specialist, RD,
Consumer Affairs Specialist
LND, Nutritionist.
Radio & TV Specialist
Press Specialist
Home Economists
Regional Supervisors, Family and Consumer Education Program
Evaluation Specialist
Professors of Food Science and Technology Department
Technical Director, U.P.R. - Mayagüez Food Technology Laboratory

External

Food Security-Security of Supplies:

Department of Agriculture

Food Security-Security Affordability:

Department of the Family, Administration of Socioeconomic Development of Families, Food and Nutrition Services

Food Safety-Farmer, Wholesaler, Retailer:

Puerto Rico Department of Agriculture

Veterinary and President of HACCP Committee, Assistant Secretary for Special Services

Department of Health, Environmental Health Secretariat Inspectors

Food Safety-Integrated Pest Management (IPM):

Cooperation will continue and efforts will be strengthened with homemakers, Home Economists Association, the food service industry, and other government agencies such as the State Department of Health.

Food Safety-Mastitis Prevention Program:

US and State Department of Health

US and State Department of Agriculture

Food Safety-Consumers and Food Employees:

The Food Safety Education Partnership external component teams are:

Director of Food Hygiene Division, PR Department of Health

Public Affair Specialist, Federal Food and Drug Administration

LND, Director of Nutrition Service, Governor's Office for the Elderly Affair

State Epidemiology, Epidemiology Division for Transmissible Disease Prevention and Control

Executive Director, Supplementary Nutrition Special Program (WIC) and "Our children first" Campaign

Veterinary and President of HACCP Committee, Agricultural Department, Assistant Secretary for Special Services

LND, Family Department: Child and Family Administration

LND, Head Start, Family Department: Child and Family Administration
LND, Director of Food and Nutrition Services State Agency, Education Department
Local level resources used by PRAES Home Economists
Puerto Rico Department of Health, Environmental Health Secretariat Inspectors
Family and Consumers Education Association
Communities, cooperative and non-profit organization consumers groups
Puerto Rico Department of Education, School Food Authority personnel
Puerto Rico Department of the Family personnel
Government day care service for infants, children, elderly, sick persons,
Churches with diurnal care service for infant, children, elderly, sick persons, etc.
"CREA" (A rehabilitation center for drug addicts and alcoholics) and other homes for drug addicts
in the rehabilitation process.
Supermarkets
Radio and newspaper

Other collaborators

Puerto Rico Association for Health Education
Puerto Rico College of Nutritionists and Dietitians
Puerto Rico Hotel School
Others food industry marketers and distributors

TARGET AUDIENCES

Handicapped and veterans are under-served population to be targeted.

Food Security-Security of Supplies:

Producers
School children
Teachers
Public in general

Food Security-Security Affordability:

Families and individual who receive food checks.

Food Safety-Farmer, Wholesaler, Retailer:

Farmers
Food Processors
Wholesalers
Retailers

Food Safety-Fish and Shellfish:

Fishermen and Aquaculturist

Food Safety-Integrated Pest Management (IPM):

Health Food Inspectors, person in charge of food service establishments, and housewives.

Food Safety-Mastitis Prevention Program:

Dairyfarmers or administrators will be contacted through Extension Dairy Projects by Extension Agents and Specialist.

Food Safety-Consumers and Food Employees:

Consumers

4H Program children and youth

person in charge and employees of food establishments

Professional personnel of institution

EVALUATION FRAMEWORK

Formative Evaluation

An ongoing formative evaluation will be conducted to assess whether the project is being conducted as planned. During the life of the project (5 years) annual formative evaluations will identify which of the project activities need to be modified or deleted prior to the summative evaluation. Formative evaluations will also assess progress in meetings the project’s goals. They will collect information in order to learn whether or not the benchmarks of participant progress were obtained and to point out unexpected developments. Additionally, formative evaluations will collect information to determine the impact of the activities and strategies on the participants at various stages of the intervention. The data conducted as part of the formative evaluation will form the basis for a summative study, which will be conducted at some future date. The Bennett Hierarchy for program evaluation will be utilized to assess the impact of the project.

Summative Evaluation

Results of the pre-test and post-test scores will be utilized to estimate the success of the project in fostering change in attitude, knowledge, skills and aspirations on food practices . The summative evaluation will include follow-up on participants to corroborate that adequate health practices are being utilized over time. Some case studies on a selected group of participants will be carried out. The evaluation design below describes the process of administering a pre-test (T1) to a group of participants in the training (X1) will receive a post-test (T2) to determine the change.

Evaluation Design

Random	Pre-test	Training	Post-test
YES	T1	X1	T2

Evaluation Summary

QUESTION 1. How adequate is the curriculum of the health project?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
What are the suggestions for implementing health projects?	*Focus Groups *Interviews *Reports	Clients Staff	Formative Summative	1
Is the curriculum appropriate for the target audience?	*Curriculum Reviews *Interviews	Staff Participants	Formative	1 & 2
Are participants getting involved in the project?	*Observations *Attendance *Focus Groups	Participants Staff	Formative	3
What is the level of satisfaction with the training?	*Interviews *Focus Groups	Participants	Formative Summative	4

QUESTION 2. What is the level of knowledge, attitude, skills and aspirations of participants regarding the adoption of adequate health practices?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
What is their level of attitude?	Survey	Participants Staff	Formative Summative	5
What is their level of skills?	Observation	Clients Staff	Formative Summative	5
What is their level of aspirations?	Survey	Clients Staff	Formative Summative	5
What is their level of knowledge?	Test	Clients	Formative Summative	5

QUESTION 3. What is the level of adoption of adequate health practices among participants of non- formal education training?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
Have participants developed interest in the recommended practices?	*Interviews *Observations *Focus Groups	Clients Staff	Formative Summative	6
Are participants planning to adopt the recommended practices?	*Interviews *Observations *Focus Groups & Case Studies	Clients Staff	Summative	6
Have participants adopted the recommended practices?	*Interviews *Observations *Focus Groups & Case Studies	Clients Staff	Summative	6

PERFORMANCE GOAL(S), OUTPUT INDICATORS AND OUTCOME INDICATORS

OBJECTIVE 1

The assurance of an adequate food supply.

PERFORMANCE GOAL 2

To annually increase consumer awareness, understanding, and information on food accessibility and affordability in which CSREES partners and cooperators plan an active research, education, or extension role.

INDICATOR 1

A. The total number of persons completing non-formal consumer education programs on food access and affordability. (output)

B. The total number of these persons who actually adopt one or more recommended practices within six months after completing one or more of these programs. (outcome)

Year	Indicator 1A (Output)		Indicator 1B (Outcome)	
	Target	Actual	Target	Actual
2000	1884	0	855	0
2001	1946	0	911	0
2002	1990	0	974	0
2003	2041	0	1120	0
2004	2045	0	1023	0

PERFORMANCE GOAL 3

To increase the effectiveness of constituent and citizen participation on public policy issues affecting food security (i.e., food access, affordability, and recovery).

INDICATOR 1

- A. The total number of persons completing non-formal education programs on public policy issues affecting food security (i.e., food access, affordability, and recovery). (output)

- B. The total number of these persons who actually become actively involved on such issues within six months after completing one or more of these programs. (outcome)

Year	Indicator 1A (Output)		Indicator 1B (Outcome)	
	Target	Actual	Target	Actual
2000	482	0	274	0
2001	472	0	291	0
2002	538	0	272	0
2003	527	0	286	0
2004	541	0	295	0

OBJECTIVE 2

To improve food safety by controlling or eliminating food-borne risks.

PERFORMANCE GOAL 2

To annually increase the consumer (included children, youth, and adult) awareness, understanding, and information on food safety, foodborne risks and illnesses in which CSREES partners and cooperators plan an active research, education, or extension role.

INDICATOR 1

- A. The total number of person completing non-formal, consumer education programs on food safety and/or food borne risks and illnesses. (output)

- B. The total number of these persons who actually adopt one or more recommended food safety behaviors or practices within six months after completing one or more of these programs. (outcome)

Year	Indicator 1A (Output)		Indicator 1B (Outcome)	
	Target	Actual	Target	Actual
2000	843	0	515	0
2001	831	0	466	0
2002	796	0	418	0
2003	745	0	403	0
2004	771	0	392	0

INDICATOR 2

The total number of individual completing food handler certification programs conducted by CSREES partners and cooperators on an annual basis. (outcome)

Year	# of persons completing programs	
	Target	Actual
2000	551	0
2001	526	0
2002	415	0
2003	385	0
2004	385	0

INDICATOR 3

The total number of facilities meeting HACCP standards for food handling and management of risks associated with food borne illnesses. (outcome)

Year	# of facilities meeting HACCP standards	
	Target	Actual
2000	196	0
2001	194	0
2002	173	0
2003	173	0
2004	170	0

INDICATOR 4

The total number of milk production facilities meeting management of risks (bacteria's and somatic cell) associated with food borne illnesses. (outcome)

Year	# Of facilities meeting 100,000 or less colonies of bacteria's.		# Of facilities meeting 750,000 or less somatic cell.	
	Target	Actual	Target	Actual
2000	373	0	365	0
2001	378	0	370	0
2002	377	0	376	0
2003	378	0	378	0
2004	388	0	380	0

PROGRAM DURATION

5-Year Program Cycle

ALLOCATED RESOURCES

Fiscal Year	Resources			Total
	State	Federal	Others Federal	
2000	208,065.81	128,275.36		336,341.17
	10,403.29	256.55	0.00	10,659.84
2001	218,469.10	128,531.91	0.00	347,001.01
2002	228,872.39	138,935.20	10,403.29	378,210.88
2003	239,275.68	149,338.49	20,806.58	409,420.75
2004	249,678.97	159,741.78	31,209.87	440,630.63

ESTIMATED FTE COMMITMENT

Year	Professional			Paraprofessional		
	1862	1890	Other	1862	1890	Other
2000	4.40	0.0	0.0	0.0	0.0	0.0
2001	4.08	0.0	0.0	0.0	0.0	0.0
2002	3.90	0.0	0.0	0.0	0.0	0.0
2003	3.64	0.0	0.0	0.0	0.0	0.0
2004	3.63	0.0	0.0	0.0	0.0	0.0

EDUCATION AND OUTREACH PROGRAMS

PRAES will continue developing ongoing food safety programs at different levels, from the farm to the table. There will be multi-county cooperation and Extension personnel will cooperate and disseminate research results.

PROGRAM CONTACTS

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GOAL 3 - A HEALTHY, WELL-NOURISHED POPULATION.

STATEMENT OF ISSUE(S)

Health as a personal quality or state has been highly valued and pursued throughout the history of mankind. But, despite its priority, it has proved to be difficult to measure. There are, however, certain statistics or indices used by public health to measure the populations' health status such as morbidity and mortality rates.

According to the 1995 Report of the Puerto Rico Health Department (published in 1998) coronary heart disease (CHD) was the first cause of death. It was responsible for 19.7% of the total deaths on the Island. About 8,727 persons died from heart diseases (including CHD, cerebrovascular diseases and arteriosclerosis), i.e., 28.9% of the total deaths.

General health status is largely a product of general environmental influences and it is widely recognized that CHD prevails in industrial and urban societies. Numerous specific risk factors of modern life have been identified: cigarette smoking, high serum cholesterol levels, obesity, high-fat diets, high blood pressure, Type A behavior, very high or very low social status, status incongruity, occupational dissatisfaction, unemployment, and lack of exercise. Virtually all of these factors originate from social-psychological influences.

Among the CHD risk factors associated with poor eating habits are high serum cholesterol, obesity, and high-fat diets. Culture and family heavily influence diet patterns. Recent literature on strategies to reduce CHD risk factors indicate that lasting changes in smoking, diet and exercise may require actual changes in the social conditions which created them (Greene; Simons-Morton, 1984).

Cancer is classified according to the organs in which it originates and the kinds of cells involved. Deaths from cancer make up roughly one-fifth of all deaths in Puerto Rico. Cancer is the second leading cause of death with 4,510 deaths (14.9%) for both men and women. Most cancer deaths in man are caused by prostate cancer and in women by breast and colorectal cancer. Several prevalent forms of cancer can be either prevented or diagnosed early enough to prevent spread to other organs. It is estimated that 30% of cancer deaths are linked to smoking and that another large proportion, perhaps 35%, may be associated with diet (Healthy People 2000).

Diabetes Mellitus was the third cause of death in Puerto Rico during 1994, with a total of 1,868 victims, i. e., 6.6% of the total deaths.

A contributing factor associated with the leading causes of death is diet. It is recommended that everyone should use a variety of foods with at least the minimum recommended number of portions of the food groups in the Food Pyramid for Puerto Rico everyday. It is also recommended that some 6 to 8 glasses of water be consumed daily, as recommended by this guide.

General data about food habits for Puerto Rico are not available. Most of the clientele of the regular program of the Puerto Rico Agriculture Extension Service (PRAES) are low income and have a similar socioeconomic status to the Expanded Food and Nutrition Educational Program (EFNEP) participants. Data from the PREFNEP show that the daily average food consumption for people beginning the program are: two thirds eat less than six portions of cereals and breads; two thirds, less than two portions of fruits; and half, less than one portion; four fifths, eat less than three portions of vegetables; and two fifths, eat less than two portions. Also, nine tenths consume less than three portions of dairy products; three fourths, less than two portions; three fifths, less than two portions of meat products; and one fifth, less than one portion. Puerto Ricans need to acquire healthier eating habits.

Knowledge of the amount of milk included in coffee and the almost daily use of rice and beans as a staple combination in the diet suggests that the reports from EFNEP for these two groups may underestimate their use. However, casual observation is in agreement with the low consumption of fruit and vegetables.

Accidents were the fourth causes of death. They were the largest killers of children, adolescents, and young adults ages one to 24 (Health Department, 1998). Accidents are a significant threat to adults and older people, causing death and an extraordinary number of disabilities. According to data from the Puerto Rico Department of Health the leading cause of all fatal accidents involves lack of traffic safety. In addition, alcohol is the most hazardous contributing agent in traffic accidents. Many accidents can be and are being prevented. The Puerto Rico Safety Transit Commission recommends the following approach to reduce the incidence of traffic fatalities: educating the community about the causes of accidents, the effects of alcohol in the body, and the relationship between traffic accidents and alcohol.

The sixth cause of death was AIDS. Eighteen years have elapsed since the first case of AIDS was reported in Puerto Rico. Since then, there have been more than 23,296 AIDS cases reported and more than half (62%) have died. By the end of December 1998 the island had an AIDS rate of 44.3 cases per 100,000 residents, third among the United States and territories (CDC, 1998). The epidemic has had a profound impact on individuals, families, service agencies and on the health care system. In Puerto Rico, intravenous drug use (IVDU), and sexual intercourse are the predominant modes of transmission of HIV. Fifty nine per cent (59%) of all individuals reported with AIDS or their partners are IVDU (Department of Health, 1999). Since drug abuse is one of the leading social problems on the island, the number of HIV/AIDS patients continues to rise.

Studies conducted in Puerto Rico indicate that many students are placing themselves at risk for contracting HIV. The Puerto Rico Youth Risk Behavior Survey (PRYRBS) conducted by the CDC during 1991-92, found that about 32.2% of the participants had experienced sexual intercourse (Department of Education, 1994). Of these sexually active students, three of every four are at risk of HIV infection because they do not use condoms. This behavior is similar among Puerto Rico college students (Cunningham and Rodriguez, 1991). Another study conducted with Puerto Rican 4-H members found that there was a difference in accuracy of HIV/AIDS knowledge among 4-H members of different ages (Feliciano, 1994). Misconceptions coexisted with accurate knowledge at each age level. Feliciano (1994) suggests that a culturally

sensitive HIV/AIDS education program for Puerto Rican 4-H members would involve a community based program that integrates the school, the mass media, and parents. Researchers agree that young children who have not yet begun to engage in behaviors that place them at risk for HIV infection are among the individuals most likely to benefit from educational efforts designed to help them develop the skills and resources they need to avoid such behaviors (Feliciano, 1994; Hirman, 1991; Sly *et al.*, 1992; Yao, 1992)

Another health problem related with early sexual activity is unwanted pregnancy. According to the Puerto Rico Department of Health (1998) in 1995 approximately one out of every five births on the island resulted from girls aged 15 through 19. Many of these young women face serious health and psychosocial risks. According to Dr. Attiya Inayatullah, President of the International Planned Parenthood Federation, teenage mothers are more likely than others not to finish school, to be unemployed, to have low-birth weight babies, and to lack parental skills (Inayatullah, 1997). Clearly, for young adolescents the most effective means of preventing possible physical and psychosocial problems related to sexual intercourse is the delay of sexual activity (Healthy People 2000).

In addition to risk associated with unprotected sexual activity, youth may also be at significant risk because of drug use. Drug use can enhance risk both through the sharing of potentially infected needles and sexual disinhibition. Drug abuse is a serious problem in Puerto Rico. The rate of increase of drug abuse is 13 times greater than the population increase. According to an estimate by Garcia and Colon (1989), the concentration of addicts in metropolitan areas in Puerto Rico is very similar to New York, which is considered to have one of the highest rates of drug abuse among United States cities. The Adolescents Survey III, Use of Drugs in Schools, conducted by Caribbean Central University and the Mental Health and Anti Addiction Services Administration (1995), showed that the drug most commonly used by the participants was alcohol (73.1%) while 11.1% used marijuana; 4.5%, inhalants; and 2.4%, cocaine. Closely connected to this experimentation is risk-taking. Adolescents are primarily influenced by their peers and are said to have a "sense of invulnerability" which leads to risk taking with dangerous consequences. The effective use of preventive programs targeted to children, youth, and families directs professional efforts toward the causes of problems rather than their symptoms, which are risky behaviors.

Infectious diseases still cause many preventable illnesses and deaths. Although childhood vaccine-preventable diseases have declined dramatically, problems remain among certain high-risk under-immunized groups. About 85.5% of two-year-olds are immunized (Puerto Rico Department of Health, 1998). The goal is to increase childhood immunization levels of two-year-olds to at least 90% by the year 2000.

References:

Centers for Disease Control and Prevention. 1998. HIV/AIDS Surveillance Report 10 (No.2), pp. 5-9.

Central of the Caribbean University and Health and Anti Addiction Service Administration (1995). The use of drugs in school Adolescents Survey III, 1994-95. Central of the Caribbean University Publication (p 1-30).

Cunningham, I., y M. H. Rodriguez. 1991. Prácticas de Riesgo Relacionadas con la Trasmisión del VIH y Medidas de Prevención entre Estudiantes de la Universidad de Puerto Rico; 1989 y 1990. En I. Cunningham, C.G. Ramos Bellido, y R. Ortiz Colón (Eds.). El SIDA en Puerto Rico: Acercamientos Multidisciplinarios (pp. 147 - 170). Rio Piedras: Universidad de Puerto Rico.

Education Department (1994). The Youth Risk Behavior. Survey Report. School Health Program, 1-15.

Feliciano, M. 1994. Accuracy of HIVISIDA Knowledge of Puerto Rican 4-H Members, Ages Seven to Twelve.

Garcia, M., and H. Colon. 1989. Appraisal of Drug Abuse in Puerto Rico. Rio Piedras, PR. Department of Anti Addiction Services - Publications.

Department of Health. 1998. *Informe Anual de Estadísticas Vitales de Puerto Rico 1995*.

Department of Health .1999, March, 31. Puerto Rico AIDS Surveillance Report 1-2.

Hirman, AR. (1991). Strategies to prevent HIV infection in the United States. Editorial, American Journal of Public Health 18(12):1557-1559

Inayatullah, (1997, September). Puerto Rico and Global Agreements on Sexuality and Reproductive Health. Lecture presented at the Senate of the Commonwealth of Puerto Rico, San Juan.

Sly, D.F., I. W. Eberstein, D. Quadagno, and J. A. Kistner. 1992. Young childrens' awareness knowledge, and belief about AIDS: Observation from a pretest. AIDS Education and Prevention, 4(3):227-329.

Yao F.K. (1992). Youth and AIDS: A priority for prevention education. AIDS Health Promotion Exchange, 2, 1-3.

KEY PROGRAM COMPONENT(S)

The PRAES will continue working in different partnerships with health and human services agencies as well as university training programs or to focus on collaborative efforts on the development of programs aimed at promotion and prevention. We will promote healthy lifestyles for people in both rural and urban areas, also addressing high risk factors through the prevention and early detection of diseases, prevention of injuries and disabilities and appropriate use of the health care system (promoting the development of self-care skills).

Once recognized the diverse needs of the general public we will concentrate our efforts to train professionals, community leaders and the public in decision-making related to health practices, including the importance of physical exercise, weight management, diabetes, cancer, cholesterol, and high blood pressure in interdisciplinary nutrition and health education programs. Also, the importance of using food labels and the Puerto Rico Food Guide Pyramid, will be addressed. EFNEP orients clients on the benefits of a nutritionally solid diet; food selection, buying and preparation; and management of food-related resources. The program also provides counseling on how to take advantage of benefits available through other community nutrition programs. Families with young children are a vulnerable target group. Implement the program to Improve Nutrition in Puerto Rico (in Spanish “Mejorar la Nutrición”: MeNu) and healthy diet project directed top children and needy families to raise awareness and change food related behavior so that the dietary pattern is improved.

In order to develop programs that help adolescents make decisions by which the risk of HIV transmission or unwanted pregnancy will be minimized, the PRAES will continue building relationships based on trust in which clear, honest, nonjudgemental, and knowledgeable information is delivered. The educational interventions (projects) should be flexible and creative to gain attention and to deliver the message. The following special health projects will be continued to develop skills to change behaviors and, to some extent, change the environment: postponing sexual activity (peer education), learning to be healthy (HIVIAIS prevention for children), using the arts in the STD, early pregnancy, and ATOD prevention (puppet theaters, music, etc.).

To educate and empower individuals and families to adopt healthy behaviors and lifestyles, we will develop a special project targeted at adult clients. This project (Promoting Healthy Lifestyles) will encourage healthy individuals and family behavior. This special project will be part of the Healthy People... Healthy Communities National Health Initiative.

To teach young people we plan to continue the Menu Evaluation Competition, and health and food component of the Plight of Young Children initiative. As part of school collaboration, the EFNEP Program Aid, offers a food and nutrition curriculum during the year. They also develop special sessions during summer.

INTERNAL AND EXTERNAL LINKAGES

Internal

Home Economists
Agricultural Agents
EFNEP
Health and Food and Nutrition Specialists
Department of Food Technology
Volunteers
Extension Specialists in other states
Professors, Department of Food Technology

External

Department of Health

WIC (Lactation)

Nutrition Education Coalition

Tobaccoism Coalition

Immunization Program

Community Planning Group for the HIV/AIDS Prevention

Folic Acid Campaign

Department of the Family

Administration of Socioeconomic Development of Families

Head Start Program

Food and Nutrition Service

Nutrition Committee of Puerto Rico

Nutrition Assistance Program

Education Department

University of Puerto Rico, Medical Science Campus/PR Training AIDS Education and Training Center

Department of Veterans Affairs

Association Pro Homeless Veterans

Food and Drug Administration

AIDS Fraud Task Force

Puerto Rico Heart Association

American Cancer Society

The collaboration in coalitions/partnerships and the coordination with different agencies will increase the impact of educational programs.

TARGET AUDIENCES

Families with children 0-5 years old (Plight of Young Children and Head Start): to provide support and education to low income families to help them develop healthy children that will be ready to succeed in school.

School age children (Team Nutrition) to help the schools serve an example of good nutrition, (the Menu Evaluation Competition): to teach young people about menu planning.

Children from low income areas (Learning to be Healthy) ATOD, HIV/AIDS prevention education programs need to be implemented at an early age.

Adolescence (Postponing Sexual Activity): research indicates that peer influences are powerful determinants in a child's decision to engage in risky behavior, it appears that peer education deserves recognition as a viable prevention education strategy.

Individuals with an interest in postponing/preventing chronic diseases (short courses): to help people use knowledge and skills to improve their personal health behaviors.
Families and individuals who receive government checks to help them buy food.

EFNEP Families and Youth.

Extension Professionals (train-the-trainer, in-service training)
Handicapped and veterans are other under-served population to be targeted.

EVALUATION FRAMEWORK

Outcome evaluation: At each session home economists ask how many plan to make changes in what they are doing. When a lesson is given, it is expected that the Home Economist will ask if someone plans to make a change based on the information received. Six months after the last session the participants are invited to another meeting at which they are interviewed, using pyramid portions, on what they think people eat after participating in sessions similar to ones they attended. The information is self-recorded by participants in terms of the number of servings by food group of the Food Guide Pyramid of Puerto Rico. This innovative method will become a substitute for dietary records or 24 hours recall interviews as a way of evaluating adoption of practices. We expect to see changes related to the following kinds of behavior:

- Increased use of fruits, vegetables, whole grain, and water
- Decreased use of animal protein sources, fats, sugar, and salt
- Eat meals of snacks instead of nibbling
- Eat an adequate breakfast
- Eat adequate snacks

The coalitions records basically record what was discussed in the meeting and the decisions that were taken regarding the issues raised.

Strategy for children and youth: The participants will complete a 1-day food record before beginning the training period and six months after they will be interviewed about what they learned in the program for an auto-evaluation of their food habits. These records will then be sent to the state level for an overall evaluation of the effectiveness of the competition as a tool to change food habits.

Formative Evaluation

An ongoing formative evaluation will be conducted to assess whether the project is being conducted as planned. During the life of the project (5 years) annual formative evaluations will identify which of the project activities need to be modified or deleted prior to the summative evaluation. Formative evaluations will also assess progress in meetings the project's goals. They will collect information in order to learn whether or not the benchmarks of participant progress were obtained and to point out unexpected developments. Additionally, formative evaluation will collect information to determine what the impact of the activities and strategies is on the participants at various stages of the intervention. The data conducted as part of the formative evaluation will form the basis for a summative study, which will be conducted at some

future date. The Bennett Hierarchy for program evaluation will be utilized to assess the impact of the project.

Summative Evaluation

Results of the pre-test and post-test scores will be utilized to estimate the success of the project in fostering change in attitudes, skills and aspirations on new health and nutrition practices. The summative evaluation will include follow-up on participants in order to corroborate that adequate agricultural practices are being utilized over time. The evaluation design below describes the process of administering a pre-test (T1) to a group of participants in the training (X1) will receive a post-test (T2) to determine the change.

Objective 1, Performance Goal 3

Strategy for adults: Home Economists maintain three basic records: a running record of the progress of individuals in the group that they teach, a record of activities marketing, and a record of coalition activities.

Evaluation Design

Random	Pre-test	Training	Post-test
YES	T1	X1	T2

Evaluation Summary

QUESTION 1. What are the reactions of the participants to the training?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
Is the curriculum appropriate for the target audience?	* Curriculum Reviews *Interviews	Staff Participants	Formative	1 & 2
Are participants getting involved in the project?	*Observations *Attendance *Focus Groups	Participants Staff	Formative	3
What is the level of satisfaction with the training?	*Interviews *Focus Groups	Participants	Formative Summative	4

QUESTION 2. What is the level of attitude, skills and aspirations of participants regarding the adoption of adequate health and nutrition practices?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
What is their level of attitude?	Survey	Participants Staff	Formative Summative	5
What is their level of skills?	Observation	Participants Staff	Formative Summative	5
What is their level of aspirations?	Survey	Participants Staff	Formative Summative	5

QUESTION 3. What is the level of adoption of health and nutrition practices among participants of non-formal education training?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
Have participants developed interest in the recommended health and nutrition practices?	*Interviews *Observations *Focus Groups	Participants Staff	Formative	6
Are participants planning to adopt the recommended health and nutrition practices?	*Interviews *Observations *Focus Groups & Case Studies	Participants Staff	Summative	6
Have participants adopted the recommended health and nutrition practices?	*Interviews *Observations *Focus Groups & Case Studies	Participants Staff	Summative	6

Objective 2, Performance Goal 2 & 3

To promote health, safety and access to quality health care.

QUESTION 1- How adequate are the curriculums of the health projects?

Sub-question	Data Collection Approach	Respondents	Schedule	Hierarchy Level
1. Do participants role the projects as relevant and interesting	Observation Attendants records interview	Clients	On going at the end of the project.	Reactions participation
2. What are the levels of knowledge of participants?	Observation Post-test	Clients	On going at the end of the project	KOSA
3. Do participants acquire a proper knowledge on the health promotion topic?	Pre-test	Clients	At the beginning	KOSA
4. Do participants adopt recommended practices?	Post-test Observation	Clients	At the end	practices
5. What are the suggestions for implementing the health projects?	Interview reports	Extension Agents	On going at the end	Reactions

PERFORMANCE GOAL(S) OUTPUT INDICATORS AND OUTCOME INDICATORS

OBJECTIVE 1

To optimize the health of consumers by improving the quality of diets, the quality of food, and the number of food choices.

PERFORMANCE GOAL 2

To annually reduce the health risk factors through non-formal educational programs to improve dietary habits and physical exercise practices in which CSREES partners and cooperators play an active research, education, or extension role.

INDICATOR 1

- A. The total number of persons completing non-formal nutrition education programs on better management of health risk factors (e.g., obesity, hypertension, etc.). (output)

- B. The total number of participants meeting or exceeding some established goal or standard to reduce the level of risk upon completion of one or more recommended nutrition practices within six months of completing one or more of these programs. (outcome)

Year	INDICATOR 1A (Output)		INDICATOR 1B (Outcome)	
	Target	Actual	Target	Actual
2000	2254	0	1309	0
2001	2325	0	1400	0
2002	2414	0	1402	0
2003	2389	0	1381	0
2004	2546	0	1492	0

PERFORMANCE GOAL 3

To annually increase consumer awareness, understanding, and information on dietary guidance and appropriate nutrition practices in which CSREES partners and cooperators play an active research, education, or extension role.

INDICATOR 1

- A. The total number of persons completing non-formal nutrition education programs that provide dietary guidance to consumers. (output)

- B. The total number of these persons who actually adopt one or more recommended Dietary Guidelines within six months after completing one or more of these programs. (outcome)

Year	INDICADOR 1A (Output)		INDICADOR 1B (outcome)	
	Target	Actual	Target	Actual
2000	9217	0	6411	0
2001	10516	0	6577	0
2002	10586	0	6776	0
2003	10686	0	6935	0
2004	8975	0	5852	0

OBJECTIVE 2

To promote health, safety, and access to quality health care.

PERFORMANCE GOAL 2

To annually improve individual and family health status through non-formal health education/risk reduction and promotion programs in which CSREES partners and cooperators play an active research, education, or extension role.

INDICATOR 1

- A. The total number of persons completing non-formal education programs on topics directly related to health education/risk reduction and health promotion. (output)
- B. The total number of participants meeting or exceeding some established goal or standard to reduce the level of risk upon completion of one or more health education/risk reduction and health promotion programs. (outcome)

Year	INDICATOR 1A (Output)		INDICATOR 1B (Outcome)	
	Target	Actual	Target	Actual
2000	1585	0	660	0
2001	1736	0	853	0
2002	1816	0	883	0
2003	1886	0	951	0
2004	1979	0	997	0

	2002		2506		0	
+-----+-----+-----+						
	2003		2711		0	
+-----+-----+-----+						
	2004		2716		0	
+-----+-----+-----+						

PROGRAM DURATION

5-Year Planning Cycle.

ALLOCATED RESOURCES

Fiscal Year	Resources			Total
	State	Federal	Others Federal	
2000	1,216,228.27	725,899.85	2,185,575.00	4,127,703.12
	60,811.41	1,451.80	65,567.25	127,830.46
2001	1,277,039.68	727,351.65	2,251,142.25	4,255,533.58
2002	1,337,851.10	788,163.06	2,311,953.66	4,437,967.82
2003	1,398,662.51	848,974.48	2,372,765.08	4,620,402.06
2004	1,459,473.92	909,785.89	2,433,576.49	4,802,836.30

ESTIMATED FTE COMMITMENT

Year	Professional			Paraprofessional		
	1862	1890	Other	1862	1890	Other
2000	73.30	0.0	0.0	0.0	0.0	0.0
2001	73.84	0.0	0.0	0.0	0.0	0.0
2002	73.98	0.0	0.0	0.0	0.0	0.0
2003	74.29	0.0	0.0	0.0	0.0	0.0
2004	74.27	0.0	0.0	0.0	0.0	0.0

EDUCATION AND OUTREACH PROGRAMS

PRAES will continue focusing in health and nutrition programs. Research from the Agricultural Experiment Station and the Campus of Medical Sciences of the University of Puerto Rico will be disseminated through the island by county Extension personnel.

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***GOAL 4 - TO ACHIEVE GREATER HARMONY (BALANCE) BETWEEN AGRICULTURE
AND THE ENVIRONMENT***

STATEMENT OF ISSUE(S)

Puerto Rico is an island 100 miles long and 35 miles wide located in the Caribbean Sea. According to the 1990 US Census, it has a population of almost four million persons or 1,100 persons per square mile. The population density in the San Juan Metropolitan area is even higher, with 9,000 persons per square mile. The requirements for housing and other infrastructure needs of such population threaten the existing natural resources and creates pollution problems.

1. Sustain and protect ecosystems and biodiversity (sustainable agriculture and forestry)

The high deforestation in the mountain area of the island has also affected the biodiversity. Forest Health Management is a joint program with the USDA-Forest Service to train agricultural agents on plant diagnostics, pests and diseases. Such partnerships will produce written material on the most common forest pests on the island and how to properly manage and control them. Practices on sustainable agriculture will continue to be emphasized and as part of the public policy of the College of Agricultural Sciences (CAS), at the Mayagüez Campus, University of Puerto Rico, for agricultural development that strives for food production while preserving the environment. To support this effort, proposals were prepared and submitted to the Sustainable Agriculture Research and Education (SARE). A 3-day training on sustainable coffee to agricultural agents is planned for November 1999. In January 2000, a group of farmers will attend the Annual Sustainable Agriculture Training Meeting. There are also plans to prepare a quarterly publication on sustainable agriculture to a mailing list of 500 persons (mostly farmers and agricultural professionals). The level of practice adoption among participants on a non-formal education training on sustainable agricultural practices will be determined by information collected based on interviews, observation during farm visits, interest in the recommended practices, number of participants planning to adopt recommended practices, or farmers who actually adopted the recommended practices.

Different practices are used to reduce the application of pesticides and chemicals for agricultural purposes. Joint efforts are conducted by the Agricultural Experiment Station, the Faculty of Agriculture of the College of Agricultural Sciences at the Mayagüez Campus, University of Puerto Rico, and the Puerto Rico Agricultural Extension Service (PRAES) through seminars and research incorporating this concept through the formal program of study and non-formal education.

An agreement with the USDA-Forestry Service and the CAS has facilitated the organization of the Puerto Rico Forestry Conference since 1997. Each year it emphasizes a different issue or topic related to forestry. There is a possibility that the Forestry Conference might be moved and rotated to other hosting countries and given an international perspective emphasizing the Caribbean area. Each Forestry Conference is evaluated by the participants and their input considered for up-coming educational activities.

The State Department of Natural Resources and Environment (SDNRE) has launched a big forestation program throughout the island. Each year they increase the quota of trees to be planted around the island in different activities during the celebration of the Earth Week in April. Another partnership with SDNRE will provide for training to agricultural agents and SDNRE personnel in urban forestry.

The intensive and indiscriminate use of pesticides in coffee, sugarcane, plantains, bananas, vegetables and ornamental greenhouses, nurseries for vegetables, coffee, and oranges present a risk for wildlife and the environment in Puerto Rico. The Law for Endangered Species mentions that the habitat destruction could be caused by the uncontrolled and inadequate use of pesticides. The protection of endangered species, equipment calibration, less toxic alternatives in the use of pesticides, and buffer zones around the community, forests or where endangered species live and breed will be emphasized. Orientation to farmers on the protection of endangered species will continue as part of the pesticide applicators training and certification by the State Department of Agriculture. In order to be certified (farmers, private or commercial applicators) have to pass a test to prove the knowledge gained. Such certification is issued by the State Department of Agriculture and is valid for four years. This certification provides for an ID license that allows the owner to buy pesticides. Coordination with Fish and Wildlife Services and the SDNRE to train their personnel on pesticide application for their coverage area and general public will continue.

2. Sustain and protect the quantity and quality of water (surface and underground)

There is evidence of water pollution in lakes and rivers due to fertilizer residues and solid waste mismanagement. The improper use of pesticides has contributed to the contamination of wells in the northern and southern parts of the island. Besides this, solvents and organic compounds contaminated the aquifers along the north coast.

A significant amount of the agriculture is conducted in small units in the mountain area. The high slopes in these areas are associated to a high cost in the implementation of adequate farm waste management practices. In Puerto Rico there are over 420 dairy farmers; approximately 3,500 swine production units; 248 broilers and 76 egg producers. There are around 400 coffee processing buildings, less than 40 have been identified by the Environmental Quality Board (EQB), which have the potential for water contamination. In addition to this situation, last year Puerto Rico suffered the fury of Hurricane Georges which devastated the coffee and banana plantations, and severely damaged the structures for broilers, egg production, and others. The Puerto Rico Agricultural Extension Service (PRAES), though its agricultural engineer unit offers assistance to this farmers on issues related to structure and waste management designs that

comply with environmental regulations. Once the technical assistance is offered, a follow-up on farmers and farm visits are conducted to corroborate that the practices are being implemented and working properly. To re-enforce this effort, assistance and training will be also provided by the PRAES- Water Quality Program to the agricultural agents and the home economists on the documentation required by government agencies to obtain permits for waste management plans or for the use of different agricultural projects. Technical assistance will be provided to farmers, homeowners and the public in water quality and animal waste management structures.

There is the need to develop curriculum materials for youth in resource conservation, soil erosion, forestry, and water. The Give-Water-A-Hand educational material is being reviewed and adapted to the local water situation and concerns. The leaders' guide will be translated to Spanish for implementation through the Youth and 4-H Program; the youth manual is available in Spanish but needs to be adapted to our conditions. This curricula shows young people how to take action in their local community targeting a watershed as the study unit by applying a community service-learning strategy to water education. The implementation of the Give-Water-A-Hand involves the following steps: identification of water problems, search for information, discussion in group meetings, reflection on what has been done, development of an action plan, and implementation of a service project. Measurable immediate results will be the translation and adaptation of the educational material to conditions in Puerto Rico; quantitative evaluation measures can be easily attained based on the number of participants, service projects developed or the water issue dealt with. This project will be supported through a collaboration of the PRAES, the USDA-Natural Resources Conservation Service (NRCS), and the Puerto Rico Space Grant Consortium (PRSGC). A grant proposal was submitted to the Environmental Education Program (EPA).

In November 1996, the University of Puerto Rico adopted its new Environmental Policy. It established a leadership role in education and awareness on environmental issues and, the development of research efforts on the efficient use of resources. A model Plan was developed at the Mayagüez Campus of the University of Puerto Rico to manage and reduce the disposal of paper and aluminum, and establish a demonstration project for the composting of grass clippings and dry leaves collected daily as a result of the maintenance of green areas. Such a project provides the opportunity for horticulture students to have hands-on experience on composting as well as 4-Hers and other youth, and community leaders. The Chancellor of the Mayaguez Campus, at that time, endorsed the plan. This effort obtained support through a grant by the Puerto Rico Solid Waste Authority. The Mayaguez Campus Waste Reduction and Management Plan started on May 1997 and will continue as an ongoing effort of the AES and the Chancellors Office at the Mayagüez Campus.

Public water-supply reservoirs in Puerto Rico are rapidly filling up with sediment, dramatically reducing the storage capacity of lakes by as much as 60% over the past 50 years. This loss of capacity, coupled with a significant increase in population, has created the potential for long term water supply problems in Puerto Rico as demonstrated by the water rationing to more than 1.7 million people during 1994 and 700,000 during early 1995 and 1997.

3. Conserve, protect and enhance soil resources

Approximately, 50% of the island has fertile soils that are good for agriculture. Most of the soils are highly erodible requiring continued use of conservation practices. As detailed by a study conducted in 1973, the percentage of steep land is as follows:

Slope	% of Land
0 – 5%	19
5 – 15%	8
16 – 35%	16
36 – 60%	27
over 60%	30

(New Agriculture, José Vicente Chandler, USDA-ARS in Cooperation with UPR-AEE and USDA-Forest Service, 1973)

Steep slopes are just one of the problems associated to many soils that encourage erosion in the order of 40 tons per acre per year. There is also a high rate of deforestation and an intensive use of fertilizers and pesticides, sometimes without adequate management practices to prevent soil and water pollution.

Seminars on Soil Erosion and Sedimentation Control were conducted in collaboration with the USDA-Natural Resources Conservation Service, a local Resource Conservation and Development (RC&D) Council, the Soil Conservation Districts, the Environmental Quality Board (EQB), the College of Agronomists, and others in an effort to create awareness among professionals responsible for the development and construction on the island. This educational effort will continue to reach non-traditional extension clientele (engineers, contractors) and other government agency personnel involved in the decision making process for construction sites and soil movement. The Soil Erosion and Sedimentation Control Regulations were approved in March 1998 by the EQB. There is the need to inform engineers, contractors, farmers and others about these regulations to comply with the law to minimize water pollution and to sustaining the viability of water reservoirs for human needs. NRCS and PRAES field staff assisted farmers to prepare conservation plans for their farms. Each farmer is required to have an up-dated plan and to implement it in order to be eligible to participate in the different USDA programs.

The Environmental Quality Incentive Program is a project coordinated by the USDA-NRCS to offer technical assistance to farmers that participate in natural resources conservation programs. This includes watersheds, specifically Lake La Plata and Lake Loiza, and underground water protection close to dairy farms in the north western part of the island. These are competitive funds obtained through NRCS. Such effort will continue at least for the next two coming years. There are plans to expand it to the coffee processing after that time. It's main objective is the implementation of soil and water conservation practices.

KEY PROGRAM COMPONENT(S)

The PRAES, strives to create awareness first and then encourage the implementation of recommended practices to reduce the contamination of soil and water resources, and to protect the natural resources through agricultural practices that are in harmony with the environment (soil erosion control measures, sustainable agricultural practices, forestry [urban and rural] reduce the amount of chemicals used [pesticides, fertilizer] increase the use of organic material—compost, and animal waste management) through its educational efforts.

INTERNAL AND EXTERNAL LINKAGES

Internal

The Department of Agriculture will help with technical assistance and incentive programs. The Natural Resources and Conservation Service will help in the implementation of practices to save the natural resources and the environment. Personnel of the College of Agricultural Sciences, the Agricultural Extension Service, and the Agricultural Experiment Stations will help with trainings, research and information sharing. PRAES specialists will collaborate with Experiment Station scientists and College of Agricultural Sciences faculty.

External

This effort will be conducted with the assistance of the Agricultural Experiment Station, the 4-H and Youth Program, the US Forest Service, the State Department of Natural Resources and Environment, the USDA Natural Resource Conservation Service, the Environmental Quality Board, the Puerto Rico Space Grant Consortium, the Resource Conservation and Development Councils, and the Soil Conservation Districts.

TARGET AUDIENCES

The target audiences are farmers, youth, farm workers, rural community leaders, and general public. Handicapped and veterans are under-served population to be targeted.

EVALUATION FRAMEWORK

Formative Evaluation

An ongoing formative evaluation will be conducted to assess whether the project is being conducted as planned. During the life of the project (5 years) annual formative evaluations will identify which of the project activities need to be modified or deleted prior to the summative evaluation. Formative evaluations will also assess progress in meeting the project's goals. They will collect information in order to learn whether or not the benchmarks of participant progress were obtained and to point out unexpected developments. Additionally, formative evaluations will collect information to determine the impact of the activities and strategies on the participants at various stages of the intervention. The data conducted as part of the formative evaluation will form the basis for a summative study, which will be conducted at some future date.

Summative Evaluation

Results of the pre-test and post-test scores will be utilized to estimate the success of the project in fostering change in attitude, skills and aspirations on sustainable agricultural practices. The summative evaluation will include follow-up on farmers, and farm visits to corroborate that sustainable practices are being utilized. Some case studies on a random group of farmers and other participants to the extension non-formal training on sustainability. The evaluation design below describes the process for administering a pre-test (T1) to a group of farmers and other participants in the training (X1) will receive a post-test (T2) to determine the change.

Evaluation Design

Random	Pre-test	Training	Post-test
YES	T1	X1	T2

Evaluation Summary

QUESTION 1. What are the reactions of the participants to the training?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
Is the curriculum appropriate for the target audience?	*Curriculum Reviews *Interviews	Staff Participants	Formative	1 & 2
Are participants getting involved in the project?	*Observations *Attendance *Focus Groups	Participants Staff	Formative	3
What is the level of satisfaction with the training?	*Interviews *Focus Groups	Participants	Formative Summative	4

QUESTION 2. What is the level of attitude, skills, and aspirations of participants regarding sustainable agricultural and environmental practices?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
What is their level of attitude?	Survey	Participants Staff	Formative Summative	5
What is their level of skills?	Observation	Participants Staff	Formative Summative	5
What is their level of aspirations?	Survey	Participants Staff	Formative Summative	5

QUESTION 3. What is the level of technology adoption among participants of non-formal education training on sustainable agricultural and environmental practices?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
Have participants developed interest in the recommended practices?	*Interviews *Observations *Focus Groups	Participants Staff	Formative	6
Are participants planning to adopt the recommended practices?	*Interviews *Observations *Focus Groups	Participants Staff	Summative	6
Have participants adopted the recommended practices?	*Interviews *Observations *Focus Groups & Farm Visits	Participants Staff	Summative	6

PERFORMANCE GOAL(S), OUTPUT INDICATORS, AND OUTCOME INDICATORS

OBJECTIVE 1

To develop, transfer, and promote the adoption of efficient and sustainable agricultural, forestry, and other resource conservation policies, programs, technologies, and practices that ensure ecosystems achieve a sustainable balance of agricultural activities and biodiversity.

PERFORMANCE GOAL 2

To annually increase agricultural producer awareness, understanding, and information regarding the adoption of agricultural production practices that sustain and/or protect ecosystem integrity and biodiversity in which CSREES partners and cooperators play an active research, education, and extension role.

INDICATOR 1

- A. The total number of persons completing non-formal education program on sustaining and protecting ecosystem biodiversity while improving the productivity of the U.S. agricultural production system. (output)
- B. The total number of these persons who actually adopt one or more recommended practices within six months after completing one or more of these programs. (outcome)

Year	Indicator 1A (Output)		Indicator 1B (Outcome)	
	Target	Actual	Target	Actual
2000	527	0	380	0
2001	729	0	416	0
2002	920	0	590	0
2003	945	0	745	0
2004	956	0	844	0

DATA COLLECTION METHODOLOGY

Farmers Interview and observation of recommended practices implementation in farm visits.

OBJECTIVE 2

To develop, transfer, and promote adoption of efficient and sustainable agricultural, forestry, and other resource policies, programs, technologies, and practices that protect, sustain, and enhance water, soil and air resources.

PERFORMANCE GOAL 1

To annually increase producer adoption of agricultural production practices that conserve and/or protect surface and groundwater supplies on or adjacent to agricultural production sites or land uses.

INDICATOR 1

- A. The total number of persons completing non-formal education programs on sustaining and/or protecting the quantity and quality of surface water and ground water supplies. (output)
- B. The total number of these persons who actually adopt one or more water management practices within six months after completing one or more of these programs. (outcome)

Year	Indicator 1A (Output)		Indicator 1B (Outcome)	
	Target	Actual	Target	Actual
2000	2462	0	1559	0
2001	2693	0	1784	0
2002	2900	0	1815	0
2003	3008	0	1969	0
2004	3388	0	2029	0

PERFORMANCE GOAL 2

To annually increase producer adoption of agricultural production "best practices" that conserve, protect, and/or enhance the soil resources on or adjacent to agricultural production sites or land uses.

INDICATOR 1

- A. The total number of persons completing non-formal education programs on conserving, sustaining, and/or protecting soil resources. (output)
- B. Total number of these persons who actually adopt one or more soil conservation practices within six months of completing one or more non-formal education programs. (outcome)

Year	Indicator 1A (OUTPUT)		Indicator 1B (OUTCOME)	
	Target	Actual	Target	Actual
2000	2561	0	1433	0
2001	2542	0	1776	0
2002	2607	0	1889	0
2003	2619	0	1908	0
2004	2627	0	1945	0

DATA COLLECTION METHODOLOGY

Follow-up on farmers and farm visits to corroborate the practice implementation and that is properly applied.

OBJECTIVE 3

To improve decision-making on public policies related to agriculture and the environment.

PERFORMANCE GOAL 2

To annually increase the effectiveness of constituent and citizen participation on public policy issues affecting agricultural production, the environment, and ecosystem integrity and biodiversity.

INDICATOR 1

A. The total number of persons completing non-formal education programs on public policy issues affecting agricultural production and ecosystem integrity and biodiversity. (output)

B. The total number of these persons who actually become actively involved in one or more public policy issues within six months after completing one or more of these programs. (outcome)

Year	Indicator 1a (Output)		Indicator 1b (Outcome)	
	Target	Actual	Target	Actual
2000	205	0	150	0
2001	290	0	241	0
2002	295	0	246	0
2003	307	0	275	0
2004	341	0	292	0

PROGRAM DURATION

5-year planning cycle.

ALLOCATED RESOURCES

Fiscal Year	Resources			
	State	Federal	Others Federal	Total
2000	1,024,186.62	613,278.15	285,000.00	1,922,464.77
	51,209.33	1,226.56	8,550.00	60,985.89
2001	1,075,395.95	614,504.71	68,550.00	1,758,450.66
2002	1,126,605.28	665,714.04	119,759.33	1,912,078.65
2003	1,177,814.61	716,923.37	170,968.66	2,065,706.64
2004	1,229,023.94	768,132.70	222,177.99	2,219,334.64

ESTIMATED FTE COMMITMENT

Year	Professional			Paraprofessional		
	1862	1890	Other	1862	1890	Other
2000	42.20	0.0	0.0	0.0	0.0	0.0
2001	22.47	0.0	0.0	0.0	0.0	0.0
2002	22.46	0.0	0.0	0.0	0.0	0.0
2003	22.41	0.0	0.0	0.0	0.0	0.0
2004	21.39	0.0	0.0	0.0	0.0	0.0

EDUCATION AND OUTREACH PROGRAMS

Some ongoing environmental projects will be continued during the next five years. Coordination with all related agencies/organization will be continued and research will be disseminated.

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GOAL 5 - TO ENHANCE ECONOMIC OPPORTUNITIES AND THE QUALITY OF LIFE AMONG FAMILIES AND COMMUNITIES

STATEMENT OF ISSUE(S)

Puerto Rican families and communities look now dramatically different from what they did a generation ago. The rapid economic and social transformation undergone by the Island from 1940 until the early 70's--from an agricultural to an industrial-based society--brought about improved standards of living in terms of life expectancy, education and housing, but insufficient progress in terms of reducing the prevailing unemployment rates and the chronic poverty of the majority of the population. Changes in the global economy since the mid-seventies, with the concomitant restructuring of major local economic sectors--agriculture, manufacturing, government and service, among others, have exacerbated these adverse conditions, particularly in rural areas.

Social and economic changes have also had an impact upon the family system and families' lifestyle. It is important to promote the capacity of the individuals, families and community to have healthy behaviors and a better lifestyle to improve their decisions in all things related to have a healthy life and being a "Healthy People... and Healthy Communities". While there has been a decline in the fertility rate of the population, there has been a parallel increase in the following indicators: the number of married mothers with young children working, the number of children living with a single parent, the number of births outside marriage, the rate of divorce, the number of unmarried adults, and the rate of adolescent mothers in the population.

The following statistics show part of the current situation of Puerto Rican families. According to the 1990 census the total population of Puerto Rico was 3,522,037. Of this number, 54% were women and 46% were men. Seventy-one percent was urban and nearly 29% was rural. Ten per cent of this total were children between the ages of 0 to 5 years old (362,460) and approximately 856,397 (24%) were children and adolescents between the ages of 6 to 18 years old. The number of births recorded by the Puerto Rico Department of Health in 1993 was 65,242. Of these, 12,820 births were from adolescent mothers. These adolescent mothers are in a disadvantaged position because they are not prepared to face the physical changes occurring during the maternity period and the emotional, social and economic factors affecting them. The rate of infant mortality is 13.4% and this is related with the inadequate nutrition of the younger mothers.

Another aspect that influences family stability is income. The 1990 Census of Population showed that the per capita income of Puerto Rican families was \$4,177 and the median income, \$9,988. The total number of families in Puerto Rico was 889,998 and the level of poverty 58% (U.S. Bureau of the Census, 1990). Department of Labor statistics reported in 1993-94 a total labor force of 1,051,000 and an average unemployment rate of 16.8%. Women amounted to 456,000 or 43.4% of the total work force. Of these women, 122,000 were household heads. Even though Puerto Rican society's and men's attitudes toward household tasks and childcare and rearing responsibilities seem to be changing, women are still principally responsible for these chores.

Given the high dependence of Puerto Rican families on government transfer payment programs and on government employment (22% of total employment in 1993), it is reasonable to assume that household conditions may be adversely affected by the combined effects of the federal Welfare Reform Act, the planned downsizing in government employment, and the changes occurring in the manufacturing and agricultural sector (Aponte-Garcia, 1997; Carro-Figueroa,

1997). Families once dependent on government economic assistance will have to work toward self sufficiency in a setting where employment opportunities are likely to be fewer and more competitive (Puerto Rico Department of the Family, 1995; Aponte-Gracia, 1997). Welfare reform will also affect financial aids to students.

Quality of life has been defined as "a product of the terms by which people relate to each other, socially, politically and economically; and the terms by which people relate to other elements of the physical and biological environment" (Sustainable Agriculture Quality of Life Task Force, 1994). While the contribution of agriculture to the Gross Domestic Product (GDP) has diminished in recent years (Puerto Rico Planning Board, 1995), due to its high multiplier effect and the lack of other alternative employment opportunities in rural areas, its continued viability is critical for maintaining and improving the quality of life in Puerto Rico.

From a research and public policy perspective most of our efforts are devoted to the documentation of how changes in international and local market conditions for the Island's products affect the economic situation of producers, and the impact this is having on farm families, local communities and different regions of Puerto Rico. Labor market research on the effects of social and economic restructuring--particularly in rural areas--aims to provide a sound knowledge-base to community development efforts geared toward increasing employment opportunities, including self-employment. Research on the local and non-local dimensions of community food systems and on the social and economic contributions of local food systems to their communities, is also undertaken in response to the need to improve the viability of local agriculture. This information will be useful to current Agricultural Extension Service and other public and private efforts geared toward creating alternative marketing channels for Puerto Rican products. Finally, in an attempt to enhance the quality of urban and rural environments, research is also devoted to the evaluation of vegetative materials best suited for the reforestation of the highly erodible soils present in the Island.

Educational efforts are also directed toward clarifying, on a personal and community-wide basis, what are the ethical values associated to the concept of quality of life. It has been observed that marketing and advertising strategies tend to emphasize the view that the more material things you possess, the higher your social status and the quality of life you enjoy. Families are not motivated to value their own internal resources and the worth of home-based work as tools that could help them to improve their quality of life. In 1996 personal consumption of goods and services amounted to \$27,668.7 millions (Puerto Rico Planning Board, 1996). At present, aggressive advertising is directed toward youth, underscoring the need to target part of our educational efforts to this particular segment of the population.

Housing needs in Puerto Rico are estimated to be about 10,551 units per year (Estudios Técnicos, 1994). Fifty seven percent (57%) of the total housing need is for houses between \$40,000 to \$77,000 (Ibid.) which in terms of housing prices, falls in the moderate price category. Immigration is continually increasing. It is expected that by the year 2001 Puerto Rico will have 4 million inhabitants (Ibid.). Families that do not qualify for public housing have to opt for renting, or struggle financially with housing payments that absorb almost fifty percent (50%) of their disposable income. Frequently these properties do not meet family needs in terms of space and accommodation for family members. On the other hand, government plans are to sell public housing units to their dwellers, in order for them to become homeowners. For years public housing programs have provided families with appropriate shelters, but not with education regarding maintenance and upkeep of the units. Consequently, many families are living in an unhealthy environment where garbage and debris are common in the premises.

The Extension Service has developed educational home based programs to help families use their own resources and start home-based businesses, therefore helping themselves to increase family income. This educational program suggests many ways in which families can turn skills, hobbies and ideas into money. The creation of home-based businesses is a growing trend in the economy. One of the areas that individuals and families commonly choose to develop their home based business is in the clothing specialty, a field particularly targeted by our educational efforts.

In 1993 the number of married couples was 33,200; divorces were 13,724. The Department of the Family reported in 1996 that the total number of child abuse victims was 22,145. The use of drug and alcohol have affected children and adolescents. Statistics show that around 54,996 pre-adolescents have tried alcohol at least once in their lives and that the use of cigarettes is common among children twelve years old or more. We must educate parents of children in pre-school and elementary grade to protect them against drugs. We also have to teach parental skills to the public, if we want to contribute to the development of stable and happy children that can be successful in school and become responsible citizens of our society.

The elderly population is growing rapidly in Puerto Rico. According to the 1990 Census of Population it represents 13.2% of the Island's total population. Of this per cent, 27.78% have some type of physical and/or mental limitation. The forecast for the coming century is that this 13.2% will increase to 15.2%. Because of the rapid changes occurring in the socio-economical and technological aspects of Puerto Rican society, meeting the needs of our aging is challenge.

One of the goals the Extension Service to develop effective leaders among the families, youth, and communities with whom we work. It is important that family members acquire skills in leadership, in order to cope with the different situations they can face in the future. A program to develop leadership characteristics among our community collaborators can vitalize and strengthen the foundation of the democratic system, and prepare citizens to participate more effectively in the issues and problems they are likely to confront and how to solve them.

KEY PROGRAM COMPONENT(S)

The Agricultural Extension Service will develop an educational program to: (1) strengthen the capacity of families to nurture, support and guide their members throughout their lives, (2) orient the families to assure their resources, (3) strengthen the capacity of families and communities to be partners in building stronger families that could contribute to on going efforts in community development; and (4) manage better the expertise of Extension educators at all levels. Each municipality will prepare a plan of action to accomplish the state goal. At the state level a model program will be prepared for adaptation and implementation in the communities by Extension educators. The efforts will emphasize the increase in interagency and organization collaboration at federal, state, and municipal level to improve outreach to families. Other strategies are to train and educate parents, couples, and children in different topics of family relations and child development, develop special projects in childcare, adolescents as in life skills, youth at risk problems, financial aspects, have to be a better consumer and better leaders and citizens.

Another strategy will emphasize the use of volunteers as sources of support for families at risk and involve families in public policy decisions that affect their well-being and their communities. This will be done by using more effectively technology such as distance learning strategies that will help to reach more clientele.

The Extension educators will prepare publications, articles, training, curriculums, radio and television programs, forums, and workshops.

INTERNAL AND EXTERNAL LINKAGES

Internal

Home Economists, Agricultural Agents, Professors from the Department of Agricultural Education (College of Agricultural Sciences, University of Puerto Rico, Mayaguez Campus), Professors from the School of Ecology, Family and Nutrition of the University of Puerto Rico, Río Piedras Campus, 4-H Youth Specialists, Communications Specialist, Publications Office of the Agricultural Experiment Station, Mass Media Office of the Cooperative Extension Service, Personnel of the Planning and Evaluation Office of the College of Agricultural Sciences (Mayaguez Campus), Investigators of the Agricultural Experiment Station, Technical personnel from different Experiment Stations, Department of Sociology and Psychology (University of Rico, Río Piedras Campus).

External

Department of Agriculture, Department of Education, Department of Labor, Consumer Department, Puerto Rico Planning Board, Head Start Program, Volunteer Leaders, Farmers and Producers

TARGET AUDIENCES

Families with children 0-5 years old and childcare providers – Both the families with preschool children and the providers need to be oriented and trained on child growth/development, early childhood education, and care.

Married couples and teenagers – They need to strengthen the family base and the relationship between both sexes.

Families and youth at risk – They need to develop special projects to improve their quality of life.

Parents – They need to be educated on how to rear and discipline their children.

School age children and teenagers – They need to develop life skills in order to be better citizens and learn how to handle their problems.

Elderly persons – They need to be oriented on how to face their problems and have a better quality of life.

Volunteer leaders – They will be an important ingredient to expand the educational message to technology to other clientele.

Low income families and other families – Help them to improve their socio-economic environment and orient them on how to manage their resources, and to be wise consumers.

Handicapped and veterans are other under-served population to be targeted.

EVALUATION FRAMEWORK

Formative Evaluation

An ongoing formative evaluation will be conducted to assess whether the project is being conducted as planned. During the life of the project (5 years) annual formative evaluations will identify which of the project activities need to be modified or deleted prior to the summative evaluation. Formative evaluations will also assess progress in meeting the project's goals. They will collect information in order to learn whether or not the benchmarks of participant progress were obtained and to point out unexpected developments. Additionally, formative evaluations will collect information to determine the impact of the activities and strategies on the participants at various stages of the intervention. The data conducted as part of the formative evaluation will form the basis for a summative study, which will be conducted at some future date. The Bennett Hierarchy for program evaluation will be utilized to assess the impact of the project.

Summative Evaluation

Results of the pre-test and post-test scores will be utilized to estimate the success of the project in fostering change in attitude, skills and aspirations on community desirable practices. The summative evaluation will include follow-up on participants to corroborate that adequate family and community practices are being utilized over time. The evaluation design below describes the process of administering a pre-test (T1) to a group of participants in the training (X1) will receive a post-test (T2) to determine the change.

Design, Sample, Data Collection and Instrumentation.

The population to be included will be extension agents, extension clientele, and leaders. Volunteers and other participant organizations. Total population will be about 1,000. In order to conduct the evaluation, a representative advisory committee will be organized. Ten stakeholders, representing different sectors or organizations, will form the committee. The advisory committee will design the focus group. The focus group will determine the project needs. Additionally, the advisory committee will utilize the results of the focus groups to prepare the instrument under the guidance of the evaluator and program specialists. Participants in the survey will be a random sample of the target population. The population will include extension agents, leaders, volunteers, clientele and other cooperating organizations. The survey will cover the areas of community, family and youth. The instrument will be administered at the beginning and at the end of each year. The results of the survey each year will help to compare the data and assess the change. It will also indicate whether or not the program has accomplished its objectives.

Evaluation Design

Random

Pre-test

Training

Post-test

YES

T1

X1

T2

Evaluation Summary

QUESTION 1. What are the reactions of the participants toward the training?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
What are the suggestions for implementing community? Projects	*Focus Groups	Clients Staff	Formative Summative	1
Is the curriculum appropriate for the target audience?	*Curriculum Reviews *Interviews	Staff Participants	Formative	1 & 2
Are participants getting involved in the project?	*Observations *Attendance *Focus Groups	Participants Staff	Formative	3
What is the level of satisfaction with the training?	*Interviews *Focus Groups	Participants	Formative Summative	4

QUESTION 2. What is the level of attitude, skills, and aspirations of participants regarding the adoption of adequate family and community empowerment practices?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
What is their level of attitude?	Survey	Participants Staff	Formative Summative	5
What is their level of skills?	Observation	Participants Staff	Formative Summative	5
What is their level of aspirations?	Survey	Participants Staff	Formative Summative	5

QUESTION 3. What is the level of adoption of family and community empowerment practices among participants of non-formal education training?

Subquestion	Methods	Respondents	Stage	Hierarchy Level
Have participants developed interest in the recommended practices?	*Interviews *Observations *Focus Groups	Participants Staff	Formative	6
Are participants planning to adopt the recommended practices?	*Interviews *Observations *Focus Groups & Case Studies	Participants Staff	Summative	6
Have participants adopted the recommended practices?	*Interviews *Observations *Focus Groups & Case Studies	Participants Staff	Summative	6

PERFORMANCE GOAL(S), OUTPUT INDICATORS, AND OUTCOME INDICATORS

OBJECTIVE 1

To increase the capacity of communities and families to enhance their own economic well-being.

PERFORMANCE GOAL 2

To annually increase economic opportunities in communities through economic development programs in which CSREES partners and cooperators play an active research, education, and extension role.

INDICATOR 1

- A. The total number of public officials and community leaders completing non-formal education programs on economic or enterprise development. (output)

The total number of these public officials and community leaders who actually adopt one or more recommended practices to attract new businesses or help expand existing businesses within six month after completing one or more of these programs. (outcome)

Year	Indicator 1A (Output)		Indicator 1B (Outcome)	
	Target	Actual	Target	Actual
2000	546	0	267	0
2001	536	0	245	0
2002	507	0	219	0
2003	508	0	263	0
2004	530	0	258	0

INDICATOR 2

The number of new businesses started resulting from economic development programs developed in collaboration with CSREES partners and cooperators. (outcome)

Year	# of new businesses started	
	Target	Actual
2000	41	0
2001	43	0
2002	44	0
2003	42	0
2004	44	0

INDICATOR 4

The number of jobs created by the formation of new businesses and expansion of existing businesses resulting from economic development programs developed in collaboration with CSREES partners and cooperators. (outcome)

Year	Indicator	
	Target	Actual
2000	34	0
2001	28	0
2000	25	0
2001	24	0
2004	27	0

PERFORMANCE GOAL 3

To annually improve the financial status of families through financial management education programs implemented in which CSREES partners and cooperators play an active research, education, or extension role.

INDICATOR 1

A. The number of persons completing non-formal financial management education programs. (output)

B. The total number of these persons who actually adopt one or more recommended practices to decrease consumer credit debt or increase savings within six months after completing one or more of these programs. (outcome)

Year	Indicator 1A (Output)		Indicator 1B (Outcome)	
	Target	Actual	Target	Actual
2000	4354	0	4,098	0
2001	4629	0	3,827	0
2002	4379	0	3,680	0
2003	4355	0	3,556	0
2004	4355	0	3,458	0

OBJECTIVE 2

To increase the capacity of communities, families, and individuals to improve their own quality of life.

PERFORMANCE GOAL 1

To annually increase the incidence of caring communities resulting from non-formal education programs in which CSREES partners and cooperators, play an active research, education, or extension role.

INDICATOR 1

A. The total number of persons completing non-formal education programs on community decisionmaking and leadership development. (output)

B. The total number of these persons who actually become actively involved in one or more community projects within six months after completing one or more of these programs. (outcome)

Year	Indicator 1A (Output)		Indicator 1B (Outcome)	
	Target	Actual	Target	Actual
2000	7492	0	3784	0
2001	7459	0	3887	0
2002	7554	0	3874	0
2003	7595	0	4006	0
2004	7711	0	4037	0

INDICATOR 2

A. The total number of dependent care providers completing non-formal education programs. (output)

B. The total number of these dependent care providers who actually adopt one or more new principles, behaviors, or practices within six months after completing one or more of these programs. (outcome)

Year	Indicator 1A (Output)		Indicator 1B (Outcome)	
	Target	Actual	Target	Actual
2000	2843	0	1200	0
2001	2654	0	963	0
2002	2840	0	904	0
2003	2695	0	896	0
2004	2958	0	761	0

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PERFORMANCE GOAL 2

To annually increase the incidence of strong families resulting from non-formal education programs in which CSREES partners and cooperators play an active research, education, or extension role.

INDICATOR 1

- A. The total number of persons completing non-formal education programs on parenting. (output)
- B. The total number of these persons who actually adopt one or more parenting principles, behaviors, or practices within six months after completing one or more these programs. (outcome)

Year	Indicator 1A (Output)		Indicator 1B. (Outcome)	
	Target	Actual	Target	Actual
2000	2752	0	2376	0
2001	2796	0	2383	0
2002	2713	0	2398	0
2003	3009	0	2424	0
2004	2966	0	2502	0

INDICATOR 2

- A. The total number of persons completing non-formal education programs on youth development. (output)
- B. The total number of these persons who actually adopt one or more youth development principles, behaviors, or practices within six months after completing one or more of these programs. (outcome)

Year	Indicator 1A (Output)		Indicator 1B. (Outcome)	
	Target	Actual	Target	Actual
2000	10000	0	8500	0
2001	11500	0	9200	0
2002	12100	0	10309	0
2003	14201	0	11140	0
2004	16109	0	12900	0

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CIVIL RIGHTS

GOALS & PROCEDURES: EQUAL OPPORTUNITY EMPLOYMENT

The Puerto Rico Extension Service Equal Employment Opportunity Program has established policies and procedures regarding personnel management and employment for underrepresented and underutilized employees and applicants without consideration of race, color, sex, national origin, religion, age and mental or physical handicap. Extension informs people about programs available, equal employment opportunities, sex equity participation, and handicap involvement.

An Affirmative Action Plan is prepared and reviewed annually to provide equal employment opportunities to all persons, keeping a discriminatory-free environment in all areas including: recruiting, hiring, training, compensation benefits, promotions, transfers, layoffs, recall from layoffs, and educational, recreational and social programs. As part of our approach, we have discussed and published the policy, procedures and action plan for progress, and all other aspects of the Extension EEO Program. A complaints procedure was developed and Extension personnel and applicants were informed about it. It incorporates specific program targets for the delivery of Extension educational programs and related activities to meet the needs and interests of underrepresented groups as a means of increasing their participation.

All activities will be announced by one or more of the following mass media: circular letters, television and radio announcements, newspapers, posters located in public facilities, like schools, colleges, public organizations, etc. These announcements will show our non-discriminatory policy and the name and address of the person to contact in case of discriminatory treatment. One copy of the poster "...And Justice for All" will be placed in every Extension Office and other facilities used by Extension in serving the public.

The EEO Officer will work closely with administrative, super-visory, and other staff members to incorporate training requirements needed to implement and sustain the EEO Program into the induction and in-service training programs for all employees.

Conduct ADA training for employees and supervisors to ensure they are familiar with the policies and practices for the full participation of individuals with disabilities in Extension activities, programs, and employment.

GOALS & PROCEDURES: PROGRAM DELIVERY

The Extension Service helps people in the problem solving process, mainly in communities, and does not discriminate because of race, color, national origin, sex, age and physical or mental handicap. Help and guidance are offered through the organization by advisory committees and the involvement of the people in the community. They learn how to use community resources to solve their problems.

Extension professionals and paraprofessionals offer counseling and guidance to farmers and their families, low-income families, youth, and community leaders. Special attention must be given to

local minorities or protected groups, the disabled, the old, the veterans, and women. Participation of members of these groups is promoted and increased through different committees and activities of the Extension Service's educational programs. These programs are: Agriculture, Marketing, and Natural Resources; Family and Consumer Sciences; 4-H and Youth; and Community Resource Development. Also there is cooperation among state government agencies that promote guidance from Extension personnel to other areas not exactly limited to those above mentioned.

Major emphasis is being given to disabled youth to join the 4-H program.

The EEO Officer will continue evaluating the whole selection process to insure freedom from bias and, thus, aid in the attainment of the goals and objectives.

An Affirmative Action Plan is prepared and reviewed annually to provide equal employment opportunities to all persons, keeping a discriminatory-free environment in all areas including: recruiting, hiring, training, compensation benefits, promotions, transfers, layoffs, recall from layoffs, and educational, recreational and social programs.

The Extension Service will not provide assistance to organizations or groups that exclude persons from membership through discriminatory practices.

GOALS & PROCEDURES: PUBLIC NOTIFICATION

The Agricultural Extension Service of Puerto Rico offers educational programs to all citizens and does not discriminate because of race, color, sex, national origin, religion, age and mental or physical handicap. Extension uses all mass media available to announce that our activities are open to all the public. Also, we make special efforts to encourage all potential clientele and underrepresented and protected groups to participate in our programs.

All Extension activities will be announced by one or more of the following mass media: television programs, radio programs, circular letters, newspaper, and posters. The announcements will feature our non-discriminatory policy and the name and address of the person to contact in case of any discriminatory treatment. One copy of the poster "...And Justice for All" will be placed in every Extension Office and other facilities used by Extension in serving the public.

GOALS & PROCEDURES: CIVIL RIGHTS TRAINING

The Civil Rights Act of 1964, as amended, provides protection of constitutional rights in public education and public facilities.

Laws and regulations of the Civil Rights Commission prohibit discrimination in federally assisted programs like those of the Agriculture Extension Service and many others in Puerto Rico.

The Equal Employment Opportunity (EEO) Officer will offer training staff members and supervisors to familiarize them with laws and regulations on civil rights and to assure that supervisors understand that their work performance will be evaluated on the basis of their equal employment opportunity efforts, as well as other criteria.

New Extension employees will receive information on Civil Rights at the Induction Training. The local Extension Service will create awareness among its personnel of Civil Rights regulations through regular training meetings and circular letters.

GOALS & PROCEDURES: ON-SITE COMPLIANCE REVIEWS

To assure full compliance of the Equal Employment Opportunity Program, the Extension Personnel Office will oversee that the analyses of job qualification standards and job descriptions are carried out making the necessary adjustments on a regular basis. The Personnel Office must carry out an analysis of hiring and assignment practices to determine the extent of any discrimination that might be present in the different procedures. It has prepared job description and qualification standards for all personnel that are reviewed annually to prevent any kind of discrimination. Education is provided to facilitate and promote a better use of human resources in Extension.

A training program will be developed to give orientation to county agents, home economists, specialists and office personnel. Committees for on-site reviews will be reorganized at six regional meetings. They will receive training on EEO programs. An induction training program for new employees and personnel with joint appointments will also be conducted.

During planing cycle 1999-2004 the same Internal Complaints Procedure will be in use. The complaints procedure in the Agricultural Extension Service gives the complainant the opportunity to ask for a revision at a higher level in the University system. This is established in the Regulations for Administrative Procedures of the Higher Education Council of the University of Puerto Rico, Certification Number 138 (1981-82), as amended. In addition, the Procedure for Formal and Informal Actions in Sexual Harassment and Sexual Discrimination established by the University of Puerto Rico has been in use.

REPORTING OPTION SELECTED
REPORTING OPTION SELECTED
REPORTING OPTION SELECTED
REPORTING OPTION SELECTED
REPORTING OPTION SELECTED
Total (100%) Data Collection
ADDITIONAL COMMENTS

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POPULATION AND CLIENTELE PROJECTIONS: 1862 PROFESSIONAL

	White not of Hispanic origin	Black not of Hispanic origin	American Indian/ Alaskan Native	Hispanic	Asian or Pacific Islander	Male	Female
FY 2000 Participat.	145,595 1.0%	0 0.0%	0 0.0%	1,310,360 99.0%	0 0.0%	701,604 48.2%	754,351 51.8%
FY 2001 Participat.	148,208 1.0%	0 0.0%	0 0.0%	1,333,879 99.0%	0 0.0%	714,261 48.2%	767,826 51.8%
FY 2002 Participat.	151,543 1.0%	0 0.0%	0 0.0%	1,363,889 99.0%	0 0.0%	729,870 48.2%	785,562 51.8%
FY 2003 Participat.	152,839 1.0%	0 0.0%	0 0.0%	1,375,558 99.0%	0 0.0%	738,095 48.3%	790,296 51.7%
FY 2004 Participat.	154,857 1.0%	0 0.0%	0 0.0%	1,393,718 99.0%	0 0.0%	749,815 19.0%	798,760 51.6%

POPULATION AND CLIENTELE PROJECTIONS: 1862 PARAPROFESSIONAL

	White not of Hispanic origin	Black not of Hispanic origin	American Indian/ Alaskan Native	Hispanic	Asian or Pacific Islander	Male	Female
FY 2000 Participat.	13,897 1.0%	0 0.0%	0 0.0%	126,478 99.0%	0 0.0%	75,648 53.9%	64,727 46.1%
FY 2001 Participat.	1269 1.0%	0 0.0%	0 0.0%	11,429 99.0%	0 0.0%	9,945 78.4%	2,753 21.6%
FY 2002 Participat.	1,269 1.0%	0 0.0%	0 0.0%	12,698 99.0%	0 0.0%	9,945 78.3%	2,757 21.7%
FY 2003 Participat.	1,269 1.0%	0 0.0%	0 0.0%	12,698 99.0%	0 0.0%	9,941 78.3%	2,757 21.7%
FY 2004 Participat.	951 1.0%	0 0.0%	0 0.0%	8,567 99.0%	0 0.0%	7,501 78.8%	2,017 21.2%