2009 University of Puerto Rico Extension Annual Report of Accomplishments and Results

Status: Accepted

Date Accepted: 06/02/2010

I. Report Overview

1. Executive Summary

This accomplishment report covers the period from October 1, 2008 to September 30, 2009. During this fiscal year, the Puerto Rico Agricultural Extension Service (PRAES) used 191.8 FTE's.

PRAES signed multiple agreements and/or made collaborative efforts throughout the island during fiscal year 2008-2009. Public entities; non-profit organizations; public and private universities in and outside of Puerto Rico; local, state, and federal organizations; community organizations; radio and television stations; and the press participated with PRAES to achieve various goals ranging from agriculture to family and community concerns.

Human Health and Well-being

PRAES continued working in different partnerships with health and human services agencies to focus on collaborative efforts on the development of programs aimed at the promotion of health and the prevention of disease. Healthy lifestyles were promoted among people in rural and urban areas, and high risk factors were addressed through the prevention and early detection of diseases, the prevention of injuries and disabilities, and the appropriate use of the health care system.

PRAES personnel continued health promotion projects targeting children and youth using curricula guides, such as: "Learning to be Healthy" (HIV/AIDs Prevention) and "Towards a Drug Free Year 2000", for children, and "Postponing sexual activity", "Human Sexuality", and "HIV/AIDs Prevention", for adolescents. They also continued the hygiene project "Enhancing your personal appearance".

Of 1,897 children and youth who completed non-formal health promotion programs, 1,659 (87%) adopted one or more of the recommended practices after completing one or more of the programs. Some of the practices adopted were as follow: 148 children acquired skills in identifying and rejecting sexual abuse, 166 youth reported having acquired knowledge and modified attitudes related to the prevention of sexually transmitted infections, and 546 developed a personal hygiene program; 394 reported having acquired skills to identify ATOD and expressed their feelings related to this subject.

Nine hundred and eleven (911) adults completed non-formal education programs on health promotion topics. After completing the program, 903 (88%) adults reported having reduced their risk levels upon the completion of one or more recommended practices; 284 (54%) maintained and kept their blood sugar and cholesterol levels under control and 287 (64%) check their blood pressure levels and maintain them at optimum levels.

Adults and youth received training about the importance of engaging in physical activity and reducing sedentary activities to promote health, psychological well-being and healthy body weight. To lower the risk of chronic disease, it was recommended that people get at least 30 minutes of moderate intensity physical activity above their usual activity at work or at home on most days of the week.

A total of 3,591 were oriented through physical education programs and encouraged to engage in regular physical activity: 450 adults and 3,141 youth. As a result, 2,517 of the total persons oriented reduced their risk levels for a chronic disease: 409 of the adults (91%) began to do 30 to 60 minutes of physical exercise on most days of the week; 2,108 of the youngsters (67%) incorporated physical activities into their lifestyles. This increase, from the 900 projected, is due to the refocusing of the agents' work to meet the educational needs of the population.

Consumer Education and Individual and Family Resources Management

Financial education is an area that has gained interest among the public in recent years. The goal of the Consumer Education and Individual and Family Resources planned program is to increase the financial well-being of the consumers through knowledge, skills, and self-confidence in competencies such as: how consumers' behavior influences decision making, budgeting, debt reduction, credit-wise, savings and investment.

Nine hundred and seven (907) persons completed the consumer education course and 649 completed individual and family resources management courses. Six hundred and thirteen (613) consumers prepared an individual or family budget, 144 adopted practices to reduce debt, and 637 adopted practices on how to save.

Collaborations or coalitions were maintained with the Puerto Rico Departments of Consumer Affairs and Education, Consumer Credit Counseling, the IRS and other agencies working in matters related with consumer affairs.

Food Safety

The goal of the Food Safety Planned Program is to improve food safety through the control, reduction or elimination of contamination risks.

During FY 2009, PRAES offered two major courses: "Fight BAC!" (PRAES personnel and volunteers selected a minimum four out of ten lessons, based on consumer needs) and the "Protect Your Baby" curriculum (addressed to pregnant women and mothers of infants, it includes a 4-lesson flip chart and brochures). Eighty Fight Bac! Courses were offered. The Food Safety Education Consortium, which prepared materials for consumers, emphasized this year on proper hand washing, not only for food safety, but because of the H1N1 Virus. One thousand one hundred and fourteen (1,114) participants benefitted by these courses.

Forty three (43%) per cent of the consumers that completed the Fight Bac course adopted at least one safe foodhandling practice, as follow: hand-washing, 43%; measuring food temperatures, 23%; cleaning and sanitizing surfaces, 34%; avoiding cross-contamination, 41%; and reducing holding time to two hours, 34%.

PRAES achieved important and major alliances with the local Department of Health and the Food and Drug Administration in order to provide update information to the food managers that participated in our courses. Ninety-six (96%) per cent of 4,840 participants approved the Food Safety exam with an average of 70% or more after taking the course. The test measures the participant's knowledge on the topics the Food Code specifies as requirements for the person in charge of a food establishment.

Nineteen (19) trained home economists offered Food Safety managers' course, in collaboration with health inspectors, who talked about the regulatory agency and what they expect from the food establishments. The number of participants increased because the local Department of Health recognized that the PRAES Food Safety course complies with the knowledge areas required by the Food Code and, due to their alliance with PRAES, the health inspectors are recommending mostly our course.

PRAES, in collaboration with the Puerto Rico Department of Health, offered a 13-lesson Food Safety course to 5,031 persons. Topics included personal hygiene and health; HACCP, buying receiving, preparing, and serving food; physical facilities, food-borne disease, and food security.

Of the 5,031 persons that completed the Food Safety course, 3,782 (75%) adopted 15 or more of 20 selected food handling practices recommended by the Food Code (85% informed that they wash their hands when changing tasks or food items, 75% reported that they have separate cutting boards, 72% maintain proper holding temperatures, 85% wash and sanitize equipment properly, and 70% use a food thermometer to measure food temperatures.

Strengthening Youth Life Skills, Leadership, and their Community

The Puerto Rico Four-H and Youth Development program has identified youth development as a major area of emphasis for its long-range educational program. This area is designed to provide youth with positive opportunities to learn and interact with peers and adults, provide leadership development and focus on the enhancement of life skills through research-based educational programs.

One thousand eight hundred and seven (1,807) trainings and workshops were offered on life skills and subject matter. Six thousand nine hundred and fifty-nine (6,959) children and youth participated in educational programs designed to teach basic life skills: 1,249 reported improved decision-making skills, 1,615 reported having improved their communication and relationship with their parents and peers, and 669 reported improved conflict management skills. Three hundred and seventy-one (371) youth/volunteers conducted community services learning projects.

Crop Production

An economically profitable and progressive agriculture requires efficient plant management and good pre-harvesting management practices of produce to obtain excellent quality and better utilities. In Puerto Rico crop production is the second in economic importance with a value of $300.48 million during FY 2008-2009. Our crop commodities include fruit, vegetables, ornamentals, coffee, bananas, starchy crops, and plantain.

However, the presence of the broca insect in coffee, sigatoka disease in plantain and banana, and insect vector and bacterial pathogen of greening citrus disease, has affected crop production, increased crop management practices and reduced profits. The increase in imported of crops which compete with local produce in the local markets has also affected the farmers' income and added to the loss of production when they are unable to sell their crops.

PRAES agents prepared trainings and educational material on various subject matter in order to orient farmers on better and improved management practices to control disease and insects in their crops, increase crop production, and maintain the sustainability of their farms. They used different educational methodologies to meet these goals: workshops, trainings and on-site farm orientation visits and demonstrations, seminars, public service announcements, distribution of educational material (newsletters, brochures on the various subjects related to crop production and management practices) web sites, TV programs, and exhibits.

The farmers were oriented on new liquid and slow release fertilizer programs, insect and disease control, and postharvest management. The management practices included how to make their products more attractive and increase their value, such as packing products on the farm, attractive labels and boxes to promote the commodities, and processing part of the production in ready to cook and prepare products.

As a result, the farmers targeted were motivated and 3,228 farmers adopted better management practices recommended by PRAES agents. One thousand one hundred and fifty-nine (1,159) farmers adopted the recommended practices and increased the quality and production of their crop commodities of plantain, bananas, coffee and other crop commodities. Also, 264 farmers adopted better value-added and postharvest management practices to make their products more attractive to buyers and get better market prices. Five hundred and sixty-five (565) farmers increased production and the value of their products by making them more attractive to buyers. They also changed some expensive production practices (solid fertilizers) for less expensive fertilizer programs and used better equipment to control insects, diseases and weeds.

Engineering and Biosystems

Many of the structures and waste management systems of the farms in Puerto Rico are old and some were built without the necessary permits. Besides reducing the risk to human life, new and existing structures have to follow efficient engineering practices and must comply with the requirements of the Puerto Rico Building and Regulations Authority, the Environmental Quality Board, the Department of Health and other agencies in order to receive the necessary permits.

During FY 2008-2009, PRAES established 52 collaborations with different government agencies in Puerto Rico to improve engineering and biological systems infrastructure. One hundred and seventy-five (175) persons adopted one or more of the recommended practices to increase the efficiency of their structures and comply with all the permits. Eighty (80) farmers improved their structures and or comply with permits: legalizing their projects and qualifying them for government incentives and lower insurance rates. This puts them in a better position to face problems associated with expansion and complaints from neighbors. Forty-seven (47) waste management systems were designed and 90 plans and specifications for model structures were completed and distributed. Also, two demonstration facilities were established.

Families and Children

The family structure in Puerto Rico has changed with important implications for our children. PRAES developed educational programs to empower families to nurture, support and guide their members throughout their lives and to motivate them to improve the quality of life and well-being.

The family life specialist developed workshops, curricula, and trainings in successful parenting, character traits, values, family strengths, aging aspects, and life skills for families, children, youth and elderly people. As a result of the educational efforts, 3,308 persons increased their knowledge in parenting related areas, 861persons in aging aspects, and 1,700, in values and character traits. One hundred and twenty (120) volunteers/community leaders demonstrated their adopted skills by teaching and/or training others. One thousand nine hundred and seventy-five (1,975) persons increased their knowledge through educational material and other resources distributed through campaigns and other educational methodologies.

Empowering and Self-management Communities

The Community Resources Planning and Development Program focuses in the delineation of an effective community Economic Development and Self-management program that will address Puerto Rico's most pressing social issues.

Once the leaders are trained to do volunteer work in their communities, they are involved in the identification and solution of their problems. To prepare the plan it is necessary that most community members participate in its organization. After the communities are organized and prepare their plan of work, the community leaders must take action over the needs identified by the residents in the economic and social study.

Community members met with PRAES personnel at the local level and representatives of municipal and state agencies to prepare a strategic plan of work based on the communities' needs. Through participatory action research tools, the leaders together with the Extension agent consultant, conducted and participated in assemblies, meetings, and trainings in empowerment where they analyzed the communities' needs and chose the most urgent needs in order of priority. They also identified different projects to impact the community, such as the need to preserve and protect their land and the food production garden.

Community leaders organized a workshop in home and community food production and a short course in "Communities rescue their land".

Eighty-three (83) communities were organized, 69 prepared a plan of work, 50 prepared a social and economic study in the community, and 125 coalitions are established with 558 members.

One hundred and eighty-six (186) communities took action over their needs. They organized 320 meetings and workshops and in which 1,700 community members and leaders participated and developed 388 community activities like beach cleaning, festivals, land protection, environmental conservation, and family values. Thirteen organized communities rescued 1,048 acres of land, conducted 78 courses in the community food production initiatives with the participation of 1,436 members that completed the courses, and established 30 community vegetable gardens; 229 persons informed an increase in their community interaction.

One thousand two hundred and twenty-three (1,223) leaders participated in the organization of these educational activities that provided 4,461 volunteer hours with an economic contribution of $16,229.00 in community empowerment.

Plant Protection

PRAES agents trained banana and plantain farmers on estimation of incidence of Black Sigatoka in the field. The Black Sigatoka IPM guide was delivered to growers during farm visits.

A manual about IPM in forest nurseries and new exotic pests in forests in Puerto Rico and three newsletters about new or established forest pests can be reached at the IPM Coordinator webpage: www.academic.uprm.edu/walmodovar. An electronic presentation about IPM of key pests in herbs is used by Extension personnel in training farmers to understand and implement IPM practices. The Extension agents and the Plant Pathology specialist trained producers through seminars, radio programs, and visits to hydroponics farms. Growers were educated about key pests of herbs and the management practices available for their control. Hydroponic nurseries were visited and surveyed for diseases and pests and growers received IPM recommendations.

The citrus commodity emphasized the evaluation of IPM practices in nurseries to control the citrus leafminer (CLM) and Citrus Greening (CG). CLM research results showed excellent control with the use of biological and reduced risk pesticides and established parasitoids for biological control of this insect. Results from this research are posted in www.academic.uprm.edu/aalvarado, and used by Extension agents in their trainings to citrus nursery managers and growers. A poster that includes insect lifecycle, symptoms and management was developed and distributed among citrus producers.

In relation to Citrus Greening, a lethal disease of citrus recently reported in Puerto Rico in September of 2009, the IPM specialist, in a project funded by the NIFA IPM Support program, developed a field guide about the disease and the insect vector. Seminars were offered to citrus nurseries, citrus growers and Extension agents about identification and available management of Citrus greening and its vector during September to December 2009.

According to UPR research, the primary limiting factors to important crops like coffee, plantain and banana, bruits and vegetables, are soil fertility, insects, diseases and weeds. When these limiting factors reach an economically damaging level, they must be controlled in an integrated and efficient way to maintain the highest economic return for crops. In coffee, 60% of the production is infected with the coffee berry borer.

The IPM program in Puerto Rico offered producers an educational program that consisted of trainings in IPM, pest diagnostic services and reports with IPM recommendations, and publications (manuals, IPM guides, pest alerts). Producers in

edu/walmodovar,www.academic.uprm.edu/aalvarado, and www.academic.uprm.edu/ofarrill. Extension agents are trained producers in using IPM to control the coffee borer mainly by the use of traps and biological control with "Beauveria".

Eight hundred and forty-three (843) producers reduced the use of pesticides after completing an IMP program: 186 producers in coffee; 306, in banana and plantain; 107, in fruit; 205, in vegetables; and 54, in ornamentals. About 70 farmers used traps and reduced insect population to control the coffee borer on their farms in about 50%. In relation to citrus leafminer (CLM) control, field testing of six biological and reduced-risk pesticides in citrus nurseries demonstrated that spinosad, azadirachtin, and abamectin are capable of suppressing CLM well below economic injury levels.

Soil, Water and Air

PRAES and USDA-NCRS continued their joint efforts to promote the management of rangelands through the development of educational activities (training meetings), seminars, follow-up visits, and others) geared to the implementation of recommended practices to protect the natural resources and the best management practices to use during farming.

There are farms with contaminated areas that affect their neighborhoods. Some of the farms are located near watersheds that require good management practices. This affects not only the health and well-being of the humans living in these areas, but of their animals, crops and environment as well.

Puerto Rico Extension Agents discussed the regulations of the PR Quality Environment Board, Environmental Protection Agency (EPA), and PR Department of Natural Resources & Environment with the farmers to help them understand the importance of adopting them and the consequences or negative impacts on their businesses of not doing so.

PRAES agents oriented the farmers on air and water quality and environmental regulations through trainings meetings, conferences, and educational material distributed. Of 167 farmers oriented, 43 adopted the recommended practices for air and water quality, 158 comply with the regulations on air and water quality. Several laws were enforced by local and federal agencies.

Fertilizer costs have increased during the past two years due to an increase in the cost of raw material and imports. PRAES agents and specialists offered information on alternatives to chemical fertilizers and their effective use. PRAES specialists trained PR Department of Agriculture personnel, extension agents, and farmers on fertilization. We also made farm visits and field demonstration tests, coordinated soil analyses with the PR Department of Agriculture, and made nutrient recommendations for the commodities.

Three hundred and forty-nine (349) farmers, of 527 trained, adopted the fertilization practices. More farmers are using foliar fertilizers and composting products.

The erosion of our soils is causing the sedimentation of lakes and the loss of fertility. Land suitable for agriculture is being used for the construction of new housing and roads and there is a lack of reservoirs to supply water for both agriculture and human consumption. The future of Puerto Rico's watersheds is of great concern, there are not enough water reservoirs and the existing ones have reduced capacity to supply the required water for home consumption, farm operations, and industrial uses.

PRAES personnel coordinated farm visits and meetings with Natural Resources Conservation Service (NRCS) and farmers in order to promote conservation practices and incentives programs. One hundred and fifty-six (156) of 915 farmers oriented, adopted the soil conservation practices.

PRAES personnel also coordinated educational efforts with the PR Department of Natural Resources and Environment, the PR Environmental Quality Board, the Natural Resources Conservation Service (NRCS) and the Aqueduct and Sewer Authority. They prepared educational material which was distributed among the farmers to orient them on watershed protection. Of 20 farmers trained, 17, adopted practices for watershed protection that include amendments to the Waste Disposal Plan and better fertilization management. Some farmers received incentives from the government.

Extension agents also offered training meetings and conferences to farmers and the general public on the conservation and efficient use of water resources. Sixty five (65) persons of 158 oriented, adopted practices to improve water resources of. Several farmers established systems to reuse water.

Healthy: No matter what my size or income

This planned program is based on the idea that a healthy body feels good and looks good "No matter what its

size". The curriculum "Healthy: No matter what my size or income" was developed for this planned program.

Two thousand two hundred and fifty-one (2,251) adult participats in nutrition courses that offered lessons on food preparation. During 2009 the PRAES home economists were asked to supply recipes developed by their program participants for inclusion in a recipe book: Tasty and Healthy Recipes of the Extension Service. Criteria were established for the Food Guide Pyramid foods groups, as well as sugars, fats, and salt included in a recipe. All recipes had to include two or more foods cultivated or potentially cultivatable in Puerto Rico. A competition held by Milagros Santiago de Santana, home economist of the Municipality of Penuelas, with 18 people participating and 8 recipes included in the cookbook. The competition held by Jean Hernandez, of the Municipality Ceiba, with the collaboration of eight volunteer leaders generated so much interest that they plan to hold another competition next year.

Increased meal preparation at home means improved nutritional value of family meals, more enjoyment of home prepared foods and potentially less cost for feeding an individual or a family. The home economists reported that 1,559 people adopted one or more recommended practices related to food preparation. Of these, 865 people recognized that they can prepare a meal for their family or for themselves, 1,054 are preparing family meals more frequently, 794 prepare one dish meals, 950 use less fat in food preparation, 441 plan their meals based on rice with beans or starchy vegetables served with 1 or 2 ounces of meat; 309 people invented their own recipe, 720 increased the use of herbs and spices in their food preparation, and 454 decreased their use of salt. One thousand one hundred and fifty-eight (1,158) people can prepare foods that look appetizing and have an agreeable taste and 899 use less pre-prepared ingredients.

PRAES home economists taught 207 courses in food and nutrition, with a total of 2,251 adult participants. They had contact with 5,638 additional people who participated in educational activities that were not part of a course. In addition, 1,409 youth and children completed non formal education courses in nutrition.

The home economists reported that 2,053 (91%) people adopted one or more practices to improve the nutritional value of what they eat; 927 can identify whole grains, and 702 increased their consumption of whole grains. In addition 1,222 people increased their fruit intake, 1,210 their vegetable intake, and 598 limited their meat intake to 1 to 2 ounces per person served, and 1,048 now serve milk as part of their meals. Substitution of oils for fats was accomplished by 890 people, and 1,026 decreased their consumption of beverages based on sugar and water. Also, 1,134 (80%) children and youth reported having improved their nutritional habits; 699 increased fruit and vegetable consumption; 520 increased whole grain consumption; 545 decreased their soda beverages consumption.

A curriculum was introduced in 2007 to PRAES home economists based on the "Healthy at Every Size Paradigm". The proposal "Using Community Based Participatory Research to Improve Health in Children" (1RO1HL091826-01) was accepted by NIH. It focuses on improving health of all children, whether they are thin, average or fat. It is based on the community members adopting improved attitudes, norms and self efficacy in three areas: stigmatization of fat people, moving more, and eating more fruits and vegetables.

People that are content with their appearance and how they define themselves are more likely to adopt new practices than those who are unsatisfied with their appearance and how they define themselves. PRAES home economists reported that 999 people adopted one or more recommendations of this curriculum; 609 of these report that they recognize that they are attractive whatever their weight or size, 371 that they can compliment another person without reference to their weight or size, 936 increased their physical activity, and 653 began doing regular physical activity.

During 2009, PRAES home economists taught 207 courses in food and nutrition and had contact with 5,638 additional people who participated in educational activities that were not part of a course; 942 people adopted one or more recommended practices to assure food security, and 467 people feel proud that they can prepare delicious meals with limited income. Practices adopted include: selection of alternatives of equal or better nutritive value (790), limiting meat intake to 1-2 ounces per person served, in compliance with the Food Pyramid for Puerto Rico, 2005 (598), planting fruits and vegetables in a garden or more limited space (847), use of fruit from trees already planted in their backyard (923), making a shopping list (893), and using supermarket specials (669). These practices resulted in 414 people who now report that they have sufficient food in their homes to feed their family during the entire month.

Management of Rangeland and Forestry Resources

Due to high costs of feed ingredients and labor the farmers needed to adopt management practices to improve their pastures, increase yields, and minimize the use of livestock feeds. Puerto Rico Extension Service (PRAES) and Natural Resources Conservation Service (USDA-NRCS) joined efforts to help farmers to adopt good management practices necessary to improve their pastures.

Educational activities, workshops, newsletters and farm visits were conducted to promote and encourage the use of better management practices. Implementation of BMP's on their farms helped farmers to increase and improve pasture production. Stocking rates, rotational grazing and adequate fertilization practices used by farmers help to improve their pastures.

As a result of implementing BMP's on their farms, 261 farmers improved their pastures utilizing manure application and grazing management practices: reducing costs of chemical fertilizers and pasture reseeding.

Workshops, educational campaigns, publications and on-site demonstrations of management practices on natural resources and forest conservation were conducted. Educational activities involving 4-H members (camps) were conducted to promote natural resources and environmental concerns in the youth about the fragility of the environment.

Sixty-one (61) persons were impacted and adopted one or more practices on natural resources and forest conservation. Some of the practices adopted were protection of watersheds, recycling of paper and waste material, and the preparation of compost.

Community leaders approached government and non-government agencies, schools, and community citizens to create awareness, and promote and develop reforestation projects.

Thirty-three (33) reforestation projects were established as a result of community and farmers' efforts. Government agencies (PRAES, DNRA, others) backed up the projects offering technical support and providing seedlings and educational materials, while community members did the work. The creation of reforested areas will help to reduce soil erosion and sedimentation in the future, diminishing the danger of flash floods.

Extension agents conducted training meetings, farm visits, circular letters, demonstration workshops, open houses, rotation practices and development of waste management system in farms to promote the adoption of pasture management practices, herbicide treatments and improve soil fertility to improve pasture production.

Eleven thousand seven hundred and four (11,704) acres in improved pastures were established by farmers in Puerto Rico. Extension agents helped farmers to develop waste management systems to reduce the use of inorganic fertilizers.

Animal Protection

Farmers have to establish preventive measures in their facilities to control animal diseases.

PRAES oriented farmers on the importance of maintaining farm animals in good health. Practices such as keeping the farm facilities clean, establishing a vaccination program, keeping individual records for large animals by age groups, or flock records for small animals, and bio-security were promoted among farmers. Recordkeeping helps to effectively treat the animals and cull the non-productive ones. Four hundred and ninety-six (496) persons acquired knowledge about recommended farm production practices regarding control and preventive programs.

Support from the Department of Agriculture, Veterinary Division, was received in this initiative. A total of 524 persons benefited.

Through farm visits, PRAES personnel disseminated information about regulations governing animals under confinement. They emphasized the adoption of management practices regarding cleanliness, sanitation, ventilation, feed quality and floor space, and the importance of keeping animals free of parasites. Three hundred and ninety (390) persons benefited from the information received through PRAES about animal welfare and protection and 570 about control of parasites on their farm.

Community Resources Development

In 2008, the PRAES Community Resources Planning and Development planned program experienced a total reengineering, developing a new set of non-formal educational methodology known as the Community Based Entrepreneurial Tool Box. The purpose was to move the participants of the program away from training and capacity building activities for specific jobs and crafts trainings to develop their entrepreneurial skills so that they can take full advantage of the skills, dexterity, talents, and service and production capacities already known to them.

During FY 2009, 367 persons were trained on community-based businesses; 305 applied the recommended practices, 18 community-based businesses were established.

Economics, Marketing, and Policy

Through the Economics, Marketing, and Policy planned programs, farmers received the necessary education and technical assistance to strengthen their abilities as managers and entrepreneurs. The program provided intensive assistance in keeping records and evaluation of alternatives, tax management approaches, accounting methods, financial budgets for enterprises, credit and income statements, inventories, agricultural risk management, marketing strategies, and policies analysis. One hundred and twenty-five (125) farmers and agricultural entrepreneurs adopted one or more economic practices; 100 used economic tools to make effective financial decisions to improve their business.

Animal Production

The livestock sector represents the 51% of Puerto Rico's gross agricultural income (Department of Agriculture, Statistics FY 2008-2009). It includes dairy and beef cattle, poultry, swine, aquaculture, and small operations such as rabbits, goats, sheep, bees, and horses.

During FY 2008-2009, 1,220 farmers were trained on animal production practices; 244 of these increased production after adopting the recommended practices; 250 farmers improved animal reproduction practices, and 210 improved nutrient utilization practices in animals.

EVALUATION OF MULTI JOINT ACTIVITIES

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

Planned programs in PRAES were designed based on issues of critical importance identified through different methods, including the Stakeholder Input Process conducted at the Local Advisory Committee and by Stakeholder Input Committees at the state level organized by Program Leaders and Extension Specialists. These inputs give direction to the four major program areas which in turn designed different planned programs to address these issues.

In the agricultural program area, different activities took place such as the Enterprise Meetings, which were organized in close collaboration with the Agricultural Experiment Stations. In this area the two main critical issues identified by our stakeholders were: 1. High costs of fertilizers and 2. Competition in the use of water for agricultural purposes. To address these issues, different meetings were held with farmers to discuss the alternatives for fertilization including composting, liquid fertilizers, and other agricultural practices suitable for farming. These alternatives are highly promoted in order to reduce production costs and conserve the natural resources. There was also an increase and continuous distribution of educational material on water supply during the various agricultural fairs and festivals conducted Islandwide. To continue addressing these critical issues, two specific planned programs (Crop Production, and Economics, Marketing and Policy) will contribute in evaluating the field practices and determining costs. In addition, a multi-institutional collaboration was established with the PR Department of Agriculture, which is funding two proposals in the use of liquid fertilizers and soil liming.

At the Family and Consumer Sciences area (FCS), critical issues were identified through the Local Advisory Committees and through focus groups conducted at the state level with a small sample of participants. Critical issues identified included the need to strengthen values, parenting and relations at the family level, as well as the importance of continuing to stress the budget, savings and credit areas. These areas continued to be emphasized in the planned programs.

The 4-H program area established an effective communication with youth, volunteers and staff through stakeholder meetings, the merit review process, and continued consultation with the youngsters. The critical issues identified by our young stakeholders included drug and alcohol abuse, peer pressure, sex education, family relations, and nutrition, among others. These issues are already being addressed by our planned programs and some local and regional issues are addressed through small grants. One of these successful proposals addresses the need of improving health and nutrition among our younger population. The "Route 4Healthy Living" project received funds from the Walmart Foundation and the National 4H Council. This project has contributed to an increase in knowledge and skills in healthy food habits.

In the Community Development area, the national economic crisis continued to be a critical issue for the community as evidenced by an increase in the participation of diverse communities in the Community Resources Development planned program. New and updated educational material was produced in this area to address this need.

2. **How will the planned programs address the needs of under-served and under-represented population of the state(s)?**

The planned programs in agriculture offered small farmers an outreach training and technical assistance project focused on the socially disadvantaged small farmers. They represent approximately 95% of the total number of farmers. During FY 2008-2009, this group received special attention to their particular needs on the effective use of fertilizers and crop alternatives, such as organic fertilizers and sustainable practices.

The planned programs in the FCS area, addressed the priority audience of low-income women head of families. In

addition, the special project PREPAS-New Horizon specially targeted low-income parents, adolescent mothers and the elderly.

The Four-H and Youth Development planned program's priority audience were low-income children and youngsters. The program also continued its emphasis on educational activities for handicapped 4Hers, which was previously an under-served audience in the program. Two specific educational activities were designed for this particular group: the "State Day for Very Important 4-Hers" and the "SNAG" program (Starting New at Golf) in collaboration with the PR Golf Association. A curriculum was developed in the Community Development planned program to target the needs of low-income communities, particularly reaching more low-income women, small farmers, and fishermen with the purpose of developing microenterprises.

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

Every planned program at PRAES described the expected outcome and impacts through outcome indicators reported in the Electronic Reporting System that collects data throughout the state. Impacts are collected through local and state success stories and reported in Impact Statements in the Federal Annual Report. The great majority of the planned programs reported at least one impact statement, which focused on outcomes or changes in action and conditions. In the FCS planned programs some of the impact statements emphasized the adoption of recommended practices in food safety and food consumption in order to improve the health and nutrition of our children and adults. The Youth Development planned program presented how increasing decision making skills in youth has resulted in diverse initiatives to promote agriculture and protect the environment. The Community development planned program had an increase in outcome measures such as the number of community-based business established are demonstrating progress towards achieving a long term impact of improving communities' economy and wellbeing in these times of economic crisis. The agricultural planned programs' outcomes focused on changes in action showing increases in adoption of recommended practices resulting in increased production.

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

Planned programs in PRAES continued to improve their efficiency through collaborative multi-institutional efforts with major agencies and institutions that work with similar audiences. For example, planned programs in agriculture continued coordination with other agencies such as the PR Department of Agriculture, NRCS and Commodity Farmers Association; participated in task forces to address specific issues, and attended the Farm Bureau commodities meetings. It also developed new educational material according to the farmers' needs, organized fairs and mass media communication to promote the planned programs' activities, and expanded the electronic web page. As in previous years, the youth development planned programs' collaborative activities were very important and determinant in achieving this year's goals. These included collaboration with NOAA, National US Forest Service, and Natural Resources Department, which contributed to the transformation of youth's attitudes for the conservation, protection and participation in environmental initiatives. Planned programs will continue to be effective by increasing changes in knowledge, skills, practices, and conditions in our participants, families and communities as they are focused on the most critical needs of our people. There will be continuous actualization and improvement of our educational material in order to address these critical needs. Planned program outcomes were designed to promote changes in action and continuous efforts are given to progress towards changes in condition.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	195.2	0.0	0.0	0.0
Actual	191.8	0.0	0.0	0.0

II. Merit Review Process

1. The Merit Review Process that was Employed for this year

- Internal University Panel
- External Non-University Panel

2. Brief Explanation

The Merit Review process was conducted through the four committees that were established, representing each of the four major program areas: Agriculture, Marketing and Natural Resources; Family and Consumer Sciences; Four-H and Youth Development; and Community Resource Development. Each committee

is composed of Internal University and External Non-University Panels. Each committee met at least twice during the year. In the first meeting, Extension staff presented the Preliminary Plan of Work for the upcoming year and the committee members were asked to present their views and recommendations related to this POW. The program area leaders together with other Extension staff, then defined educational strategies to address the recommendations, which were incorporated in the final POW, as needed. During the final committee meeting of 2009, the program area leaders presented an oral and written report that identified how the committee recommendations were addressed.

III. Stakeholder Input

1. Actions taken to seek stakeholder input that encouraged their participation

- Targeted invitation to traditional stakeholder individuals

Brief explanation.

At the local level, the Local Advisory Committees' major task is to collect input from our local stakeholders. The committees are composed of at least two beneficiaries from each of the base program areas (Agriculture, Marketing and Natural Resources; Family and Consumer Sciences; Four-H and Youth Development; and Community Resource Development) and a minimum of two representatives from local agencies that work with similar audiences as Extension. Potential members were invited to participate (through letters sent by the county agents). To encourage their participate, the letters described the importance of the process and their contribution to improve Extension educational programs.

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

1. Method to identify individuals and groups

- Use Advisory Committees

Brief explanation.

The members of the local advisory committees were selected by the Extension agents from among their target audience, based on their experience and participation in Extension programs, and were invited by mail to join the committee.

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

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder individuals
- Other (Focus group, Questionnaire)

Brief explanation.

The committees met twice during the year to discuss critical local issues, as well as to identify emerging issues that could be addressed by Extension. At these meetings, each local committee identified priority issues in each of the four program areas. To collect additional information from our youth participants, a brief questionnaire was prepared and distributed to 4-Hers at different state activities throughout the year to hear of their needs and the problems affecting them. Additional input was collected by the Consumer and Family Sciences program area from focus groups organized at the state level.

3. A statement of how the input will be considered

- To Identify Emerging Issues
- Redirect Extension Programs
- In the Action Plans
- To Set Priorities

Brief explanation.

Input collected from stakeholders at the local advisory committees is reported to the state level. This data is

evaluated by state program leaders in order to identify emerging issues that should be included in the state plan of work or redirect programs when needed. In addition, at the local Advisory Committes, when farmers and other agricultural representatives identified issues that require or suggest a research agenda, these were referred to the Agricultural Experiment Station. At the local level, counties then set priorities for their local plan of work according to the stakeholders' input received.

Brief Explanation of what you learned from your Stakeholders

During this fiscal year, the issues most mentioned by the stakeholders continued to be environmental issues, protection of agricultural lands, needs of the elderly adults, family financial management, community economic development, family values, drug and alcohol abuse, and violence among youth. The stakeholders expressed their satisfaction with Extension programs. However, they recommend that these areas should continue to be strengthened in our educational efforts.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
6249970	0	0	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	6605622	0	0	0
Actual Matching	3302808	0	0	0
Actual All Other	0	0	0	0
Total Actual Expended	9908430	0	0	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from				
Carryover	0	0	0	0

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Human Health and Well-Being

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
724	Healthy Lifestyle	90%			
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	10%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	5.1	0.0	0.0	0.0
Actual	5.2	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
184079	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
92040	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conference/ training related to healthy lifestyle.
Conference/ training related to diabetes.
Conference/ training related to injury prevention .
Conference/ training related to indoor air quality.
Offer counseling in the areas of health and safety .
Work in collaboration with the communication media.
Prepared educational materials.
Partnership with other agencies to develop educational programs.

2. Brief description of the target audience

Families and children from low-income (such as those identified by the governor's office as being particularly vulnerable to social and economic problems), school age children, adolescents,
individuals with an interest in the prevention or treatment of chronic diseases, Extension and other professionals

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	6000	5000	3000	1000
Actual	7053	2873	12351	2720

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of persons that completed non-formal health education and health promotion programs.

Year	Target	Actual
2009	2500	2808

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of persons that reduced their risk levels upon the completion of one or more recommended practices on healthy lifestyles.
2	Number of persons that reduced their risk levels for a chronic disease upon the increase of physical activity in to their lifestyle.
3	Number of persons that detected and controlled indoor air contaminants in their homes.
4	Number of persons that acquired skills and modified attitudes and practices related to injury prevention.

Outcome #1

1. Outcome Measures

Number of persons that reduced their risk levels upon the completion of one or more recommended practices on healthy lifestyles.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	1500	2562

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The general health status is the product of influences of the general environment, genetics and numerous specific risk factors associated to unhealthy behaior, such as: poor diet, use and abuse of alcohol and other drugs, physical inactivity, unattended high blood pressure and diabetes and sexual behavior (for example, leading to infections, STD or teenage pregnancy). Adopting healthy beahviors such as eating nutritious foods, being physically active and avoiding tobacco use can prevent or control diseases.

What has been done
PRAES personnel implemented health promotion projects targeting children and youth. They used curricula guides, such as: "Learning to be Healthy" (HIV/AIDS prevention) and "Toward a Drug Freee Year 2000", for children; and "Postponing Sexual Activity", "Human Sexuality", and "HIV/AIDs Prevention", for adolescents. The hygiene project "Enhancing Your Personal Appearance" was also implemented. A new alcohol, tobacco and other durgs (ATOD) project "Health is Super" was implemented during 2009. PRAES personnel oriented adult audiences in the areas of healthy lifestyles and human sexuality.

Results
Of 1,897 children and youth who completed non-formal health promotion programs, 1,659 (87%) adopted one or more of the recommended practices after completing one or more of the programs. Some of the practices adopted were as follow: 148 children acquired skills in identifying and rejecting sexual abuse, 166 youth reported having acquired knowledge and modified attitudes related to the prevention of sexually transmitted infections, and 546 developed a personal hygiene program; 394 reported having acquired skills to identify ATOD and expressed their feelings related to this subject.

Nine hundred and eleven (911) adults completed non-formal education programs on health promotion topics. After completing the program, 903 (88%) adults reported having reduced their risk levels upon the completion of one or more recommended practices; 284 (54%) maintained and kept their blood sugar and cholesterol levels under control and 287 (64%) check their blood pressure levels and maintain them at optimum levels.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

Number of persons that reduced their risk levels for a chronic disease upon the increase of physical activity in to their lifestyle.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	900	2516

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Being "healthy and vital" requires being ale to perform physical activity, which brings enjoyment and satisfaction to life. Restrictions in physical activity are associated to decreases in quality of life. Despite the high value Puerto Ricans place on maintaining their vigor, they do little to protect it. Puerto Ricans are physically less active than in previous years (PRBRFSS, 2009); and an aging population will become more dependent on others for basic needs if they don't become more activve.

What has been done
Adults and youth received training about the importance of engaging in physical activity and reducing sedentary activities to promote health, psychological well-being and healthy body weight. To lower the risk of chronic disease, it was recommended that people get at least 30 minutes of moderate intensity physical activity above their usual activity at work or at home on most days of the week.

Results
A total of 3,591 were oriented through physical education programs and encouraged to engage in regular physical activity: 450 adults and 3,141 youth. As a result, 2,517 of the total persons oriented reduced their risk levels for a chronic disease: 409 of the adults (91%) began to do 30 to 60 minutes of physical exercise on most days of the week; 2,108 of the youngsters (67%) incorporated physical activities into their lifestyles. This increase, from the 900 projected, is due to the refocusing of the agents' work to meet the educational needs of the population.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle

Outcome #3

1. Outcome Measures

Number of persons that detected and controlled indoor air contaminants in their homes.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	400	268

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Most people spend approximately 90% of their time indoors. This can be harmful to their health as toxic levels in indoor air can be higher than the outdoor air in even the largest and most industrialized cities. The lung is the most common site of injury by airborne pollutants. Pneumonia and influenza are the sixth leading cause of death in Puerto Rico and a toxic indoor air would be an issue of concern.

What has been done
In the "Protect the Air We Breath and Indoor Air Quallity (IAQ) Project" youth were trained on indoor air contaminants, their effect on human health and their mitigation and on the 4-H "IAQ Health Project", and participated in the 4-H IAQ competitions at local and state levels. Adults participated in the "Healthy Indoor Air for America's Homes" program, emphasizing on second-hand smoke and asthma prevention.

Results
A total of 127 youth were enrolled in the "IAQ Health Project"; of these, 110 (87%) reported they help to maintain their homes dust free. One hundred and forty-one (141) adults learned about indoor air contamination through short courses, seminars, and home asessment, and 107 (987) of these reported that they adopted practices to control the humidity in their homes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #4

1. Outcome Measures

Number of persons that acquired skills and modified attitudes and practices related to injury prevention.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	300	390

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Accidents, are a significant threat to adults and older people, causing an extraordinary number of disabilities and death. In Puerto Rico they are the fifth cause of death in adults and older people and the leading cause of death in children and young adults (Statistics PR Department of Health, 2009). Injuries among our population of all ages could be dramatically reduced if the health promotion approaches to prevent and control them were applied.

What has been done
PRAES audiences were oriented on risk reduction and safety to encourage them to incorporate safety habits into their lives. Children and youth were oriented through the curricula guide "Prevention of Accidents and Rejection of Drugs and Alcohol" (PAnDA)--an injury prevention project. Adults were oriented through the proejct "Prevention of Injury Using Safety" (PLUS)--developed to prepare individuals and families to take the correct steps in case of an emergency.

Results
Three hundred and ninety (390) adults and youth were oriented about injury prevention. Of these, 329 (84%) reported they adopted one or more recommended practices after completing one or more of the programs. Seventy (70) children and youth reported having acquired knowledge in the prevention of traffic safety through traffic injury prevention education programs (PAnDA)and almost all showed their skills in injury prevention. Avout 77% of children and youth made a first aid kit. Three hundred and twenty (320) adults were oriented in injury prevention and first aid. Of these, 288 (90%) reported having acquired knowledge on the topic and prepared a first aid kit; about 240 (75%) reported they adopted practices related to poison prevention at home.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle

V(H). Planned Program (External Factors)

External factors which affected outcomes
- Government Regulations

Brief Explanation

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

1. Evaluation Studies Planned

- Other ()

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Consumer Education and Individual and Family Resources Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
607	Consumer Economics	20%			
801	Individual and Family Resource Management	80%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	8.7	0.0	0.0	0.0
Actual	5.8	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
205320	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
102659	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Training the trainers
Workshops
Establishment of collaborations
Consulting
Media programs
Exhibitions (Billboards in malls and public places with informative brochures and other educational material)

2. Brief description of the target audience

New couples, individuals, low-income families, Extension professionals, personnel from other State agencies.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	3400	2500	1000	200
Actual	4884	1881	771	15

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Total number of consumers that completed the Consumer Education Course.

Year	Target	Actual
2009	550	907

Output #2

Output Measure

- Total number of consumers that completed individual and family resource management course.

Year	Target	Actual
2009	350	649

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Total number of consumers that adopted the practice of preparing their individual or family budget (Family Resource Management)
2	Total number of consumers that adopted practices to reduce debt.(Family Resource Management)
3	Total number of consumers that adopted practices on how to save.(Family Resource Management)
4	Number of consumers that opened a savings account or deposit frequently into savings account. (Family Resource Management)
5	Number of consumers that improved their financial well-being.
6	Total number of consumers that acquired knowledge about consumption decision-making process (Consumer Education course)
7	Total number of consumers that adopted savings practices through goods and services selection process. (Consumer Education course)
8	Total number of consumers that acquired knowledge about saving. (Family Resource Management)
9	Total number of consumers that established financial goals (Family Resource Management)
10	Total number of consumers that improved financial decision-making. (Consumer Education course)

Outcome #1

1. Outcome Measures

Total number of consumers that adopted the practice of preparing their individual or family budget (Family Resource Management)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	200	613

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #2

1. Outcome Measures

Total number of consumers that adopted practices to reduce debt.(Family Resource Management)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	200	144

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #3

1. Outcome Measures

Total number of consumers that adopted practices on how to save.(Family Resource Management)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	350	637

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #4

1. Outcome Measures

Number of consumers that opened a savings account or deposit frequently into savings account. (Family Resource Management)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	75	90

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #5

1. Outcome Measures

Number of consumers that improved their financial well-being.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	75	88

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #6

1. Outcome Measures

Total number of consumers that acquired knowledge about consumption decision-making process (Consumer Education course)

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

Total number of consumers that adopted savings practices through goods and services selection process. (Consumer Education course)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	450	661

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
607	Consumer Economics
801	Individual and Family Resource Management

Outcome #8

1. Outcome Measures

Total number of consumers that acquired knowledge about saving. (Family Resource Management)

Not Reporting on this Outcome Measure

Outcome #9

1. Outcome Measures

Total number of consumers that established financial goals (Family Resource Management)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	250	254

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #10

1. Outcome Measures

Total number of consumers that improved financial decision-making. (Consumer Education course)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	300	890

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
607	Consumer Economics

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy

Brief Explanation

Due to the economic crisis, the public's interest on this topic has been increasing, resulting in a higher number of participants for these courses.

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

1. Evaluation Studies Planned

- Other ()

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Food Safety

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	100%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	8.4	0.0	0.0	0.0
Actual	8.8	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
311519	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
155759	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

For consumers

Fight BAC! Courses: The teaching field personnel will select a minimum of four lessons out of eight available based on the needs of consumers.

Protect your baby curriculum: This curriculum includes a four lesson flip chart and brochures, addressed to pregnant women and mothers of infants.

Course and competition Nutrition and Innocuous recipes: This curriculum includes

1) Developing nutritious & innocuous recipes

2) Steps in preparing innocuous recipes and,

3) Puerto Rico Pyramid and competition on the preparation of original nutritional and innocuous recipes.

Exhibitions, information centers, radio shows, among others.

Persons in charge (PIC) of Food Establishments

Continue training and coordination using Home Economists to 13-lesson Food Safety Course.

PRAES and personnel of other agencies

Trainings: Emphasis on institutions that serve at-risk population in the Food Code regulations, Hazard Analysis and Critical Control Points, Food Defense, and others.

2. Brief description of the target audience

Fight BAC courses: Consumers, emphasizing at-risk population

Food Safety Course: Persons in Charge (PIC) of Retail Food Establishments including school lunch program, child and elderly day care centers, among others.

Training and specialized advising to professionals: Specialists, home economists and agricultural agents; institution administrators that work for at-risk population; environmental health inspectors, nutritionists, agronomists, health educators, and others.

Professionals from the PR Food Safety Education Partnership.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	10100	2500	0	0
Actual	18181	4130	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2009

Plan: 0

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of consumers completing one educational curriculum.

Year	Target	Actual
2009	1000	1118

Output #2

Output Measure

- Number of participants that completed Food Safety course.

Year	Target	Actual
2009	2500	5031

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of consumers that adopted one or more food handling practices.
2	Number of participants that approved the certification exam.
3	Number of participants that wrote a plan to control the temperatures in potentially hazardous foods.
4	Number of participants that adopted 15 or more of 20 selected food handling practices recommended by the Food Code.

Outcome #1

1. Outcome Measures

Number of consumers that adopted one or more food handling practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	1000	1114

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In 2006 CDC reported 1,270 outbreaks due to food-borne illnesses (diarrhea, vomiting, an upset stomach, fever, or cramps). Foodborne disease is caused by bacteria in the food or viruses transmitted to food eaten a few hours or several days ago. Most of these foodborne diseases can be avoided with safe handling practices. There are many regulations that help promote safe food handling, but when it comes to consumers, we depend mainly on education from mass media and short courses like the ones offered by PRAES.

What has been done
PRAES offered two major courses, as follow: Fight BAC! Courses (where PRAES personnel and volunteers selected a minimum of four lessons out of ten available, based on consumer needs) and the Protect Your Baby curriculum, (which includes a 4-lesson flip chart and brochures, addressed to pregnant women and mothers of infants). Eighty (80) "Fight BAC" courses were offered throughout the island. The Food Safety Education Consortium, which prepared materials for consumers emphasized on proper hand washing, not only for food safety, but because of H1N1 Virus.

Results
One thousand one hundred and fourteen (1,114) participants benefited from the courses. Forty three (43%) per cent of the consumers that completed the Fight BAC course adopted at least one safe food handling practice, as follow: hand-washing (43%), measuring food temperatures (23%), cleaning and sanitizing surfaces (34%), avoiding cross contamination (41%), and reducing holding time to two hours (34%).

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #2

1. Outcome Measures

Number of participants that approved the certification exam.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	2500	4840

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Puerto Rico Department of Health PRDH) adopted FDA's Food Code in the year 2000. The Code requires that the person in charge of a food establishment must demonstrate knowledge on safe food handling practices. PRDH requires that all persons in charge of a food establishment renew the course every three years to keep up-to-date in any changes in the regulations. PRHD's main objective is to reduce outbreaks due to foodborne illnesses.

What has been done
Nineteen (19) trained home economists offered Food Safety Manager's course in collaboration with Health Inspectors who talked about the regulatory agency and what they expect from food establishments. The number of participants increased because the local Department of Health recognized that PRAES Food Safety Course complies with the knowledge areas required by the Food Code and, due to the alliance between PRAES and PR Department of Health, health inspectors are recommending mostly our course.

Results
PRAES achieved important, major alliances with the local Department of Health and the Food and Drug Administration in order to provide updated information to the Food Managers that participated in our courses. Ninety-six (96.2%) of 4,840 participants approved the Food Safety exam with an average of 70% or more, after taking the course. The test measures the participants' knowledge on the topics the Food Code specifies as requirements for the person in charge of a food establishment.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #3

1. Outcome Measures

Number of participants that wrote a plan to control the temperatures in potentially hazardous foods.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	1500	3381

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Foods are properly cooked when they are heated for a certain amount of time and at high enough temperatures to kill harmful bacteria that cause foodborne disease. PR Health Inspectors, as part of their routine inspections, verify that food managers are measuring and recording temperatures of potentially hazardous foods. They are required to verify that Food Managers have calibrated food thermometers and the temperatures of food and refrigerated equipment.

What has been done
The Department of Health included an item in the Inspection Report Form,in which they evaluate whether Food Managers measure and record food temperatures. The Food Code requires that persons in charge of a food establishment must have knowledge on proper cooking, holding, and cooling temperatures. The importance of measuring food temperatures was emphasized. These temperatures are provided during the PRAES Food Safety Course.

Results
Since the PR Department of Health is recommending our food course, we have had more participants. Seventy (70%) per cent of our participants have begun to measure and record temperatures of potentially hazardous foods in their food establishments.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #4

1. Outcome Measures

Number of participants that adopted 15 or more of 20 selected food handling practices recommended by the Food Code.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	1700	3782

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Puerto Rico Department of Health(PRDH) adopted FDA's Food Code regulation in which the person in charge (PIC) of a food establishment must demonstrate knowledge in food safety and supervise the employees that work in the food estblishment. Health inspectors have the task of looking after the public, they verify tht PIC have the knowledge and are applying the concepts in the establishement to reduce the risk of foodborne disease.

What has been done
PRAES personnel, in collaboration with the PRDH, offered a Food Safety course, which consists of 13 lessons in topics such as personnal hygiene and health; HACCP, buying, receiving, preparing, and serving food; physical facilities, foodborne disease, and food security. Five thousand and thirty-one (5,031)persons attended the course.

Results
Seventy-five (75%) of the 3,782 participants adopted 15 or more of the safe food handling practices. Of these, 85% informed that they wash their hands when changing tasks or food items, 75% reported that they have separate cutting boards, 72% maintain proper holding temperatures, 85% wash and sanitize equipment properly, and 70% used food thermometer to measure food temperatures.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Government Regulations

Brief Explanation

During the past year, the Division for Food and Milk Hygiene of the PR Department of Health, asked the health inspectors to recommend the PRAES Food Safety Course to the Food Managers in order to comply with the Food Code requirements. This has caused a high demand for our Food Safety Courses. The Department

of Health also requires that food managers take the Food Safety course every three years, in order to obtain updated information on the changes that the Food Code may have had. One of the items verified on the Inspection Report Sheet is whether the Food Manager is properly trained on food safety issues as required by the Food Code. If the inspector finds that the person In charge does not demonstrate knowledge, plus identifies potential hazards to the public health, he/she will refer the case to PRAES and may close down the establishment until the proper repairs or adjustments are made and sucessfully completed the PRAES Food Safety course. Therefore, outcomes have been affected possitively because of the new Department of Health regulations nd the high recognition of the Food Safety course offered by PRAES.

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

1. Evaluation Studies Planned

- Other ()

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Strengthening Youth Life Skills, Leadership and their Community

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development	100%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	41.8	0.0	0.0	0.0
Actual	41.9	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
1483257	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
741628	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conferences or workshops training in life skills, leadership, and community services.
Camping and outdoor activities.
Curriculum developed in life skills, leadership and community service.
Participate in mass communication to promote 4-H as a positive organization for youth.
Projects where youth and adults volunteers can develop skills that will enable them to make a positive contribution to society.
Non-competitive activities/events.

2. Brief description of the target audience

Youth and 4-H members, Extension professionals, professional government personnel, volunteers, and community residents.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	8000	0	50000	20000
Actual	7408	0	70827	13475

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of training and workshops in life skills and subject matter.

Year	Target	Actual
2009	700	1807

Output #2

Output Measure

- Number of children/ youth who participated in competitive activities.

Year	Target	Actual
2009	1000	2663

Output #3

Output Measure

- Number of children/ youth who participated in non competitive activities.

Year	Target	Actual
2009	5500	12117

Output #4

Output Measure

- Number of children/ youth who participated in life skills and subject matter educational programs designed to teach basic life skills.

Year	Target	Actual
2009	5000	6959

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of children/youth who demonstrated improved decision making skills.
2	Number of children/youth who demonstrated improved communication skills.
3	Number of children/youth who assumed leadership roles.
4	Number of children/youth who demonstrated improved conflict management skills.
5	Number of children/youth who demonstrated improved planning and organization skills.
6	Number of youth volunteers conducting community service learning projects.
7	Number of children/youth who demonstrated improved self-esteem skills.
8	Number of children/youth who demonstrated improved teamwork skills.
9	Number of children/youth who demonstrated improved healthy life-style choices skills.
10	Number of children/youth who demonstrated improved service learning skills.

Outcome #1

1. Outcome Measures

Number of children/youth who demonstrated improved decision making skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	1500	1249

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
As part of the 4-H program, youth should develop or improve their decision-making skills. As future adults, they will be confronted with important decisions that can affect their future or their community and their society. In 4-H, they had the opportunity to put these skills into practice in making major decisions in one of NIFA´s priority areas, Climate Change. Deforestation is one of the factors contributing to climate change and one that youth can act upon.

What has been done
Through the 4-H program, 200 youth acquired knowledge from educational activities that combine theory and practice in propagation, maintenance, and care of trees and plants. At the same time, participants were able to put into practice the knowledge they received while working in three nurseries located in El Yunque National Rain Forest.

Results
These young people put into practice their decision-making skills and used the agricultural knowledge gained to identify five areas to develop urban forests. These five areas were strategically decided based on the protection they can provide to our natural resources. Six hundred (600) native trees were planted in a total of approximately 6 acres. Four-Hers continue to be in charge of the maintenance and care of these trees. These young 4-Hers learned that they are contributing to the protection of our environment through the decisions they make and, therefore, decreasing the negative effects on climate change and enhancing wildlife in forested areas.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #2

1. Outcome Measures

Number of children/youth who demonstrated improved communication skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	1500	1615

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #3

1. Outcome Measures

Number of children/youth who assumed leadership roles.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	350	1645

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #4

1. Outcome Measures

Number of children/youth who demonstrated improved conflict management skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	1300	669

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #5

1. Outcome Measures

Number of children/youth who demonstrated improved planning and organization skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	2000	1213

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #6

1. Outcome Measures

Number of youth volunteers conducting community service learning projects.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	275	819

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Food security has become one of the leading national priorities for NIFA. Our generation of young people should become aware of the importance of agriculture in providing the food and nutrition they and their families need.

What has been done
Through the 4-H program, children and youth were taught courses on food production. With different educational techniques, youth gained knowledge of the different methods of food production from traditional, organic to

flowerpots.

Results
Of the 1,557 youth participants in the courses taught island-wide, 425 youth have established garden projects in their homes, schools or communities. In the metropolitan area, a small group of these youngsters established a demonstration garden called The Barefoot Garden in the Botanical Garden at the University of Puerto Rico. Another group of 17 young 4-H members in the mountains of Orocovis developed a Seed Preservation project where they put into practice the knowledge they received in the preservation of seeds to secure a safe and healthy food supply. Through the knowledge these youngsters received about agriculture, they established different projects to promote food security in their communities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #7

1. Outcome Measures

Number of children/youth who demonstrated improved self-esteem skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	800	1297

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #8

1. Outcome Measures

Number of children/youth who demonstrated improved teamwork skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	800	2713

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #9

1. Outcome Measures

Number of children/youth who demonstrated improved healthy life-style choices skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	800	1532

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #10

1. Outcome Measures

Number of children/youth who demonstrated improved service learning skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	600	1328

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other ()

Brief Explanation

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

1. Evaluation Studies Planned

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Crop Production

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
204	Plant Product Quality and Utility (Preharvest)	30%			
205	Plant Management Systems	70%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	18.2	0.0	0.0	0.0
Actual	18.1	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
300899	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
150449	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conduct production trainings and postharvest training
Farmers' visits and guidance.
Conduct farmers' meetings.
Collaborate with local government agencies (Departments of Agriculture and Environmental and Natural Resources) and USDA (NRCS and others) .
Prepare cultivation practices and packinghouse plan.
Prepare products quality improvement plan.
Distribute publications.
Prepare crop production and postharvest publications

2. Brief description of the target audience

The crop production program's target audience consists of farmers, government professionals, county agents, USDA professionals, products distributors, and professionals from the private sector.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	5000	3000	0	0
Actual	25345	22095	14	7

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	4	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of persons trained on plant management systems in crop commodities.

Year	Target	Actual
2009	1350	9767

Output #2

Output Measure

- Number of persons trained on products quality in crop commodities.

Year	Target	Actual
2009	800	3961

Output #3

Output Measure

- Number of persons trained on value added in crop commodities.

Year	Target	Actual
2009	500	1803

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of farmers that adopted one or more recommended practices of the plant management systems in crop commodities.
2	Number of farmers that increased production in crop commodities.
3	Number of farmers that increased the quality in crop commodities.
4	Number of farmers that adopted new value-added practices in crop commodities.
5	Number of farmers that increased their income after having adopted one or more practices of plant management systems. and/or product quality.

Outcome #1

1. Outcome Measures

Number of farmers that adopted one or more recommended practices of the plant management systems in crop commodities.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	900	3228

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The presence of the greening vector and new presence of the greening causal pathogen, sigatoka disease program control for plantain and bananas, and loss of coffee production by Broca insect has been of great concern to farmers. The farmers needed to be oriented on better and improved practices to control diseases and insects and increase production on their farms.

What has been done
Through trainings and farm orientation visits offered and educational material farmers were oriented on better management practices to control insects and diseases affecting growth of their crops.

Results
Three thousand two hundred and twenty-eight (3,228) farmers with the broca insect in coffee, sigatoka disease in plantain and banana, and/or insect vector and bacterial pathogen of greening citrus disease, adopted better management practices recommended through trainings and orientation visits by PRAES agents. The increase from the 900 projected was due to new problems which motivated a larger amount of the farms targeted to adopt more of the recommended practices.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

Outcome #2

1. Outcome Measures

Number of farmers that increased production in crop commodities.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	580	726

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Several commodities had problems of diseases in their props, which affected their crop production.

What has been done
PRAES agents oriented farmers on the correct production practices. Farmers were oriented on new liquid and slow release fertilizer programs, insects and disease control, and postharvest management. The orientation was transmitted or transferred through training, farm orientation visits, and educational material produced and distributed on the subject matter.

Results
Through the trainings and farm visits of PRAES agents, 726 farmers increased the production in the different crop commodities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

Outcome #3

1. Outcome Measures

Number of farmers that increased the quality in crop commodities.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	400	1159

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The presence of the greening vector and new presence of the greening causal pathogen, sigatoka disease control program for plantain and bananas, and loss of coffee production by Broca insect. The PRAES orient farmers that require the better and improved practices to control diseases and insects and increase production.

What has been done
With the aggressive promotion of crop disease control and improved practices to improve quality, more farmers attended the trainings offered and more educational material was produce by PRAES personnel and used by the farmers.

Results
As a result of the intensive training programs and educational material of PRAES to improve production of plantain, bananas, coffee and other crop commodities, 1,159 farmers adopted the recommended practices and increased the quality and production of their crop commodities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
204	Plant Product Quality and Utility (Preharvest)

Outcome #4

1. Outcome Measures

Number of farmers that adopted new value-added practices in crop commodities.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	250	264

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The increases in the imports of crop products has forced farmers to adopt more value-added to their products in order to be able to compete in the market, increase income and maintain the sustainability of their farms.

What has been done
The farmers were oriented on the best management practices to increase the value of the production. PRAES agents oriented farmers in use practices such as packing products on the farm, attractive labels and boxes to promote the commodities, and processing part of the production in ready to cook and prepare products through trainings offered and educational material.

Results
Two hundred sixty four (264) farmers adopted the recommended management and value-added practices to make their products more attractive to buyers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
204	Plant Product Quality and Utility (Preharvest)

Outcome #5

1. Outcome Measures

Number of farmers that increased their income after having adopted one or more practices of plant management systems. and/or product quality.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	350	565

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Farmers have to compete with imports to stay competitive in the market and increase their income.

What has been done
The farmers were trained and oriented by PRAES agents on the correct practices to make their products more attractive and increase their value. Farmers adopted better value-added and postharvest management practices. They also changed some expensive production practices (solid fertilizer) for less expensive fertilizer programs and used better equipment to control insects, diseases and weeds. They made their products more attractive and had better price in the market.

Results
As a result of adopting the recommended practices, 565 farmers increased production and the value of their products by making their products more attractive to buyers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

During 2009 the economic situation of the government played an important role in the outcomes that affect the crop production. During the past two years crop production had also been affected by insects in the coffee fruits, the diseases in plantain and banana plantations, and the citrus greening insect vector and the presence of the citrus greening bacterial pathogen..

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

1. Evaluation Studies Planned

- Before-After (before and after program)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Engineering and Biosystems

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
401	Structures, Facilities, and General Purpose Farm Supplies	15%			
402	Engineering Systems and Equipment	10%			
403	Waste Disposal, Recycling, and Reuse	65%			
405	Drainage and Irrigation Systems and Facilities	10%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	5.9	0.0	0.0	0.0
Actual	5.7	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
201779	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
100890	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conduct workshops and meetings.

Establish collaborations with government agencies (Environmental Quality Board; State Departments of Health, Agriculture, Environmental and Natural Resources, and Education; Puerto Rico Aqueducts and Sewage Authority; USEPA; USDA; NRCS; and others).

Establish collaborations with our partners in the University of Puerto Rico and other educational institutions.

Develop educational material consisting of model plans and specifications for structures.

Distribute plans and specifications for structures.

Design waste management systems (new or improvement to existing facilities).
Collaborate in the construction of demonstration facilities.

2. Brief description of the target audience

Extension professionals, government personnel (professional), professionals from the private sector, and farmers.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	4200	1000	0	0
Actual	817	340	0	0

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	1	0	
Actual	0	3	3

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of workshops and meetings offered.

Year	Target	Actual
2009	100	57

Output #2

Output Measure

- Number of collaborations established to improve engineering and biological systems infrastructure.

Year	Target	Actual
2009	100	52

Output #3

Output Measure

- Number of clients that participated in the workshop on structures.

Year	Target	Actual
2009	350	374

Output #4

Output Measure

- Number of clients that participated in workshop on waste management systems.

Year	Target	Actual
2009	500	160

Output #5

Output Measure

- Number of waste management systems designed.

Year	Target	Actual
2009	50	47

Output #6

Output Measure

- Number of clients that participated in workshop on drainage or irrigation systems.

Year	Target	Actual
2009	50	35

Output #7

Output Measure

- Number of plans and specifications for model structures completed and distributed.

Year	Target	Actual
2009	50	90

Output #8

Output Measure

- Number of demonstration facilities established.

Year	Target	Actual
2009	2	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of clients that increased their knowledge about improvements to increase the efficiency of their structures (new and existing) and compliance with regulations.
2	Number of clients that increased their knowledge about appropriate systems for waste management in their projects.
3	Number of clients that increased their knowledge about drainage or irrigation facilities.
4	Number of clients that adopted one or more of the recommended practices to increase the efficiency of their structures and comply with all permits.
5	Number of clients that adopted one or more practices to improve their drainage or irrigation facilities.
6	Number of farmers that improved their structures (new or existing) and/or comply with permits.
7	Number of waste management systems improved (new or existing).
8	Number of drainage or irrigation facilities improved.
9	Number of farmers that increased their production as a result of improving their structures.
10	Number of farmers that increased their production as a result of improving their waste management systems.
11	Number of farmers that increased their production as a result of improving their drainage or irrigation facilities.

Outcome #1

1. Outcome Measures

Number of clients that increased their knowledge about improvements to increase the efficiency of their structures (new and existing) and compliance with regulations.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies

Outcome #2

1. Outcome Measures

Number of clients that increased their knowledge about appropriate systems for waste management in their projects.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	300	359

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse

Outcome #3

1. Outcome Measures

Number of clients that increased their knowledge about drainage or irrigation facilities.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
405	Drainage and Irrigation Systems and Facilities

Outcome #4

1. Outcome Measures

Number of clients that adopted one or more of the recommended practices to increase the efficiency of their structures and comply with all permits.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	125	125

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies

Outcome #5

1. Outcome Measures

Number of clients that adopted one or more practices to improve their drainage or irrigation facilities.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	5	36

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
405	Drainage and Irrigation Systems and Facilities

Outcome #6

1. Outcome Measures

Number of farmers that improved their structures (new or existing) and/or comply with permits.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	50	80

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies

Outcome #7

1. Outcome Measures

Number of waste management systems improved (new or existing).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	150	64

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse

Outcome #8

1. Outcome Measures

Number of drainage or irrigation facilities improved.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	5	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
405	Drainage and Irrigation Systems and Facilities

Outcome #9

1. Outcome Measures

Number of farmers that increased their production as a result of improving their structures.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	50	35

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies

Outcome #10

1. Outcome Measures

Number of farmers that increased their production as a result of improving their waste management systems.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	70	49

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse

Outcome #11

1. Outcome Measures

Number of farmers that increased their production as a result of improving their drainage or irrigation facilities.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	2	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
405	Drainage and Irrigation Systems and Facilities

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

The number of workshops and meetings planned was not reached. This was the result of travelling restrictions to our personnel, who was asked to be more efficient. The target audience and the number of projects that was improved were reached in the area of agricultural structures. Agricultural structure projects are worked using model plans and our clients can gain knowledge in a meeting and later take home and adapt to their particular situation without further visits by our specialists. In addition, the model plans were put in the Extension Service Web page making them more accessible to our clientele.

We didn't have the participation that was planned in the workshops and training meetings in the irrigation and drainage area; however, the goal for number of projects that were expected to improve was set low and was surpassed. Animal waste management projects that were improved were lower than planned; improvements to this type of projects usually occur as a response to visits by regulatory personnel, that motivates technical assistance by Extension staff and economic incentives by the Department of Agriculture (DA). The economic incentives program of the DA had a late start with fewer economic resources than in previous years which might have caused our goals not to be reached.

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

1. Evaluation Studies Planned

- Retrospective (post program)
- Before-After (before and after program)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Families and Children

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
802	Human Development and Family Well-Being	100%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	9.2	0.0	0.0	0.0
Actual	10.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
353999	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
176999	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Radio/TV programs.
Offered advice when clientele visit the office.
Develop curriculum related to family relations, child development, human development, elder care, family resilience, and related areas.
Workshops, trainings, and meetings.
Collaboration with government and private agencies and institutions (Department of Family, Department of Education, Head Start, local government).
Collaboration with partners in the University of Puerto Rico and other educational institutions. +
Write proposals.

2. Brief description of the target audience

Extension agents, home economists, PRAES specialists, government personnel (professionals), professionals from other agencies, parents, families, children, youth, elder people, volunteers, and general public.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	9000	1500	0	0
Actual	15893	3823	0	0

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of workshops, trainings, and meetings offered.

Year	Target	Actual
2009	60	226

Output #2

Output Measure

- Number of collaborations/established.

Year	Target	Actual
2009	260	186

Output #3

Output Measure

- Number of persons trained in parenting and related areas.

Year	Target	Actual
2009	900	3308

Output #4

Output Measure

- Number of volunteers/community leaders trained in family relations and related areas.

Year	Target	Actual
2009	200	358

Output #5

Output Measure

- Number of persons trained in aging aspects.

Year	Target	Actual
2009	200	861

Output #6

Output Measure

- Number of persons trained in values, character traits, and/or family strengths.

Year	Target	Actual
2009	600	1700

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of persons that reported improved parenting skills.
2	Number of persons that increased knowledge in parenting and related areas.
3	Number of volunteer/community leaders that demonstrated their adopted skills by teaching and/or training others.
4	Number of persons that gained knowledge in aging aspects.
5	Number of persons reported improved skills and increased knowledge in values and character traits.
6	Number of children and youth benefitted indirectly.
7	Number of persons that increased knowledge from educational material and resources through campaigns and other educational methodologies

Outcome #1

1. Outcome Measures

Number of persons that reported improved parenting skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	600	1499

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Puerto Rico's families face a bleak panorama: of deterioration of its environment and increasing stress factors and hazards and risk factors. Family members, as a group or individuals, are casualties of the current situation economic. Recession and its hardships and consequences are a complex web that entangles the welfare and well-being of the island inhabitants. Official unemployment rates are close to twenty percent. A large number of households have both parents out of work and depend on a limited income source from state and federal programs. Children neglect and violence is an issue that endangers both offspring and parents.

What has been done
Puerto Rico's Agriculture Extension Service Family and Consumer Sciences faculty is training and educating parents of all types of family structures in responsible and healthy rearing skills. The CYFAR project models are a resource to increase knowledge and skills for couples and single parents. A comprehensive intervention in all aspects of family, children, and community relations responds to expressed and measured needs of clientele. Training and other non-traditional informal education activities are currently in progress to assist families. Research based and validated curricula on child development, values, responsible parenting, stress-anger-violence management, couples relations constitute a structured educational system in which most of the program's clients actively participate.

Results
One thousand four hundred and ninety nine (1,499) participants reported an increase and improvement in their parenting skills. Beyond this outcome, an impact of almost 100 clients occurred. These are employed, self or other, with an increased disposable family income and higher standardized inventory-measured level of well-being

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #2

1. Outcome Measures

Number of persons that increased knowledge in parenting and related areas.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #3

1. Outcome Measures

Number of volunteer/community leaders that demonstrated their adopted skills by teaching and/or training others.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	100	120

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #4

1. Outcome Measures

Number of persons that gained knowledge in aging aspects.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	100	489

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #5

1. Outcome Measures

Number of persons reported improved skills and increased knowledge in values and character traits.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	600	756

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #6

1. Outcome Measures

Number of children and youth benefitted indirectly.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	200	326

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #7

1. Outcome Measures

Number of persons that increased knowledge from educational material and resources through campaigns and other educational methodologies

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	2000	1975

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Puerto Rico's Agriculture Extension Service Family and Consumer Sciences faculty instructs and educates parents of all types of family structures in responsible and healthy rearing skills. Curricula are a resource to increase knowledge and skills for couples and single parents. Training and other non-traditional informal education activities are currently in progress to assist families. Research based and validated curricula on child development, values, responsible parenting, stress-anger-violence management, couples relations constitute a structured educational system in which most of the program's clients actively participate. This is an effective educational technique to address specific needs of identified clients. Yet, Extension must use alternative methodologies, materials, and resources to contact other clientele and address other issues.

What has been done
The PRAES Family and Consumer Sciences Program during this reporting cycle undertook several mass-contact campaigns. Campaigns in domestic violence, child and youth protection, and family values occurred throughout the island. Local marches, forums, and mass media campaigns were among the activities of these campaigns. Faculty and volunteers distributed logo-stickers, leaflets, brochures, newspapers articles, radio programs, and other materials among community members.

Results
Nineteen thousand and seventy-five (19,075) participants increased their knowledge from these educational materials and resources in these campaigns and other non face-to-face educational methodologies. Impacts of these activities are not measured during this reporting cycle.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (Availability fed., ext. funds)

Brief Explanation

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)
- Comparison between locales where the program operates and sites without program intervention
- Other ()

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Empowering and Self-management Communities

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	50%			
805	Community Institutions, Health, and Social Services	50%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	26.4	0.0	0.0	0.0
Actual	27.9	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
987658	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
493828	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Workshops and meetings
Develop educational material such as curriculum and modules.
Establish community coalitions with volunteer organizations, community services organizations, institutions, and other agencies
Seminars with community services institutions that offer assistance in case of disaster or emergency, including volunteer organizations, non-profit groups and government agencies.
Community educational campaigns

2. Brief description of the target audience

Individuals and families in social and economic disadvantage communities and key leaders.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	2500	2500	0	0
Actual	9277	7591	725	271

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of workshops in leadership development.

Year	Target	Actual
2009	150	100

Output #2

Output Measure

- Number of leaders participating in workshops.

Year	Target	Actual
2009	1200	1011

Output #3

Output Measure

- Number of workshops on community organization and empowerment development.

Year	Target	Actual
2009	35	32

Output #4

Output Measure

- Number of leaders participating in workshops on community organization and empowerment development.

Year	Target	Actual
2009	175	63

Output #5

Output Measure

- Number of coalitions established in the communities.

Year	Target	Actual
2009	35	119

Output #6

Output Measure

- Number of coalition members.

Year	Target	Actual
2009	150	543

Output #7

Output Measure

- Number of seminars on emergency and disaster situations offered.

Year	Target	Actual
2009	35	96

Output #8

Output Measure

- Number of leaders participating in seminars.

Year	Target	Actual
2009	175	694

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of communities organized.
2	Number of communities that took action over their necessities to improve their quality of life through empowerment and self-management.
3	Number of community projects established to benefit the community.
4	Number of leaders participating actively in the design and implementation of community projects.
5	Number of communities that developed an emergency and safety plan.

Outcome #1

1. Outcome Measures

Number of communities organized.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	35	83

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Communities needed to be organized and identify leaders to be trained to do volunteer work to help identify and deal with community problems and needs. Through participative action research the leaders study the community and evaluate their needs. To prepare a strategic plan it was necessary that most community members participate in its organization.

What has been done
To organize the communities, the community leaders, together with the Extension agent consultant, conducted and participated in assemblies, meetings, and trainings in empowerment where they analyzed the communities' needs and chose the most urgent needs in order of priority.

Results
Eighty-three (83) communities were organized, 69 prepared a plan of work, 50 prepared a social and economic study in the community, and 125 coalitions are established with 558 members.

4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions, Health, and Social Services

Outcome #2

1. Outcome Measures

Number of communities that took action over their necessities to improve their quality of life through empowerment and self-management.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	35	172

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Community members needed to meet to deal with their communities' needs and problems. After the communities were organized they had to prepare their plan of work, and the community leaders had to take action over the needs identified by residents in the economic and social study.

What has been done
The community members met with PRAES personnel at the local level and representatives of municipal and state government agencies and identified potential leaders. The community leaders organized educational meetings and workshops for community members according to their needs.

Results
One hundred and eighty-six (186) communities took action over their needs. They organized 320 meetings and workshops and in which 1,700 community members and leaders participated. They developed 388 community activities such as: beach cleaning, festivals, land protection, environmental conservation, and family values.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

Outcome #3

1. Outcome Measures

Number of community projects established to benefit the community.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	35	66

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Through meetings and other participatory action research tools, community leaders needed to identify different projects to impact the community. Some projects that benefit them and their community were the need to preserve and protect their land and the food production garden.

What has been done
Community leaders organized a workshop in home and community food production and a short course in "Communities recue their land".

Results
Thirteen (13) communities were organized and rescued 1,048 acre of land and 16 leaders were trained. Seventy-eight (78) courses were conducted in the community food production initiatives, with the participation of 1,436 members that completed the courses and established 30 community vegetable gardens. Two hundred and twenty-nine (229) persons informed an increase in community interaction.

4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions, Health, and Social Services

Outcome #4

1. Outcome Measures

Number of leaders participating actively in the design and implementation of community projects.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	350	1223

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The community leaders' participation in the design and implementation of their projects is very important. They help the people in the community to clarify their problems and needs to improve their family life.

What has been done
The leaders organized workshops and trainings in empowerment and self-management, land protection, food production, emergency response, and community safety based on the needs identified in the social and economic study.

Results
One thousand two hundred and twenty-three (1,223) leaders participated in the organization of these educational activities that provided 4,461 volunteer hours with an economic contribution of $16,229.00 in community

empowerment.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

Outcome #5

1. Outcome Measures

Number of communities that developed an emergency and safety plan.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	35	24

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
805	Community Institutions, Health, and Social Services

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Competing Public priorities

Brief Explanation

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

1. Evaluation Studies Planned

- Case Study

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Plant Protection

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
211	Insects, Mites, and Other Arthropods Affecting Plants	25%			
212	Pathogens and Nematodes Affecting Plants	20%			
213	Weeds Affecting Plants	20%			
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	5%			
216	Integrated Pest Management Systems	30%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	11.5	0.0	0.0	0.0
Actual	8.5	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
640738	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
320369	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

PRAES agents trained banana and plantain farmers on estimation of incidence of Black Sigatoka in the field. The Black Sigatoka IPM guide was delivered to growers during farm visits.

A manual about IPM in forest nurseries and new exotic pests in forests in Puerto Rico and three newsletters about new or established forest pests can be reached at the IPM Coordinator webpage: www.academic.uprm.edu/walmodovar. An electronic

presentation about IPM of key pests in herbs is used by Extension personnel in training farmers to understand and implement IPM practices. The Extension agents and the Plant Pathology specialist trained producers through seminars, radio programs, and visits to hydroponics farms. Growers were educated about key pests of herbs and the management practices available for their control. Hydroponic nurseries were visited and surveyed for diseases and pests and growers received IPM recommendations.

The citrus commodity emphasized the evaluation of IPM practices in nurseries to control the citrus leafminer (CLM) and Citrus Greening (CG). CLM research results showed excellent control with the use of biological and reduced risk pesticides and established parasitoids for biological control of this insect. Results from this research are posted in www.academic.uprm.edu/aalvarado, and used by Extension agents in their trainings to citrus nursery managers and growers. A poster that includes insect lifecycle, symptoms and management was developed and distributed among citrus producers.

In relation to Citrus Greening, a lethal disease of citrus recently reported in Puerto Rico in September of 2009, the IPM specialist, in a project funded by the NIFA IPM Support program, developed a field guide about the disease and the insect vector. Seminars were offered to citrus nurseries, citrus growers and Extension agents about identification and available management of Citrus greening and its vector during September to December 2009.

2. Brief description of the target audience

Pesticide applicators, homeowners, landscapers, Extension agents, farmers, personnel of the Department of Environmental and Natural Resources, agronomists of the Department of Agriculture.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	3000	5000	0	0
Actual	9787	3381	0	0

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	2	0	
Actual	1	0	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of trainings offered on pesticide use and IPM program.

Year	Target	Actual
2009	100	338

Output #2

Output Measure

- Number of persons that completed a training program in integrated pest management in the crop commodities.

Year	Target	Actual
2009	350	7443

Output #3

Output Measure

- Number of farmers that completed a training program on pesticide application.

Year	Target	Actual
2009	2000	571

Output #4

Output Measure

- Number of persons trained on commercial pesticide application.

Year	Target	Actual
2009	1500	1247

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of persons that acquired knowledge after completing a training program in integrated pest management.
2	Number of persons that adopted one or more techniques after completing an integrated pest management program.
3	Number of persons that reduced the use of pesticides after completing an integrated pest management program.
4	Number of persons that established IPM program after completing a training program.
5	Number of farmers that acquired knowledge after completing a training program in pesticide application.

Outcome #1

1. Outcome Measures

Number of persons that acquired knowledge after completing a training program in integrated pest management.

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Number of persons that adopted one or more techniques after completing an integrated pest management program.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	100	1334

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
216	Integrated Pest Management Systems

Outcome #3

1. Outcome Measures

Number of persons that reduced the use of pesticides after completing an integrated pest management program.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	75	776

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
According to UPR research, the primary limiting factors to important crops like coffee, plantain and banana, fruit and vegetables are soil fertility, insects, diseases and weeds. When these limiting factors reach an economically damaging level, they must be controlled in an integrated and efficient way to maintain the highest economic return for crops.

What has been done
The IPM program in Puerto Rico offered producers an educational program that consisted of trainings in IPM, pest diagnostic services and reports with IPM recommendations, and publications (manuals, IPM guides, pest alerts). Producers in the program access pest identification and management information through the web pages www.academic.uprm.edu/walmodovar,www.academic.uprm.edu/aalvarado, and www.academic.uprm.edu/ofarrill.

Results
Eight hundred and forty-three (843) producers reduced the use of pesticides after completing an IMP program (186 producers in coffee; 306, in banana and plantain; 107, in fruit; 205, in vegetables; and 54, in ornamentals). In coffee 60% of the productionis infected with the coffee berry borer, an insect that affects fruit. Extension agents are training producers in using IPM to control the insect, mainly through the use of traps and biological control with Beauveria. About 70 farmers used traps and reduced insect population to control the coffee borer on their farms in about 50%. In relation to citrus leafminer (CLM) control, field testing of six biological and reduced-risk pesticides in citrus nurseries demonstrated that spinosad, azadirachtin, and abamectin are capable of suppressing CLM well below economic injury levels.

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
216	Integrated Pest Management Systems

Outcome #4

1. Outcome Measures

Number of persons that established IPM program after completing a training program.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	50	747

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
216	Integrated Pest Management Systems

Outcome #5

1. Outcome Measures

Number of farmers that acquired knowledge after completing a training program in pesticide application.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	1900	1469

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Other (Availability fed, ext. funds)

Brief Explanation

The external output that affected the outcomes was the presence of two new pests detected in important crops. Black sigatoka was reported in plantain and banana in Puerto Rico in late 2004 and the Coffee Berry Borer in coffee, in 2007. Farmers throughout the Island were trained in IPM and we observed that the accomplished outcomes exceeded what was planned in 2008 as a result of the impact of the educational program on farmers.

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

1. Evaluation Studies Planned

- Other (Surveys)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Soil, Water, and Air

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	10%			
102	Soil, Plant, Water, Nutrient Relationships	40%			
104	Protect Soil from Harmful Effects of Natural Elements	10%			
111	Conservation and Efficient Use of Water	15%			
112	Watershed Protection and Management	15%			
141	Air Resource Protection and Management	10%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	7.3	0.0	0.0	0.0
Actual	6.5	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
230099	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
115050	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Develop a curriculum on air quality in agriculture (animal waste management).
Offer short courses and trainings on practices, laws, and regulations related to soil, water, and air.
Develop a curriculum related to watersheds protection.

On-site farm visits.
Establish demonstration projects on the recommended practices for air quality and soil conservation practices.
Establish collaboration with government agencies (local, state & federal).
Distribute information at agricultural fair & festivals.
Field trips to demonstration projects

2. Brief description of the target audience

Farmers (includes small family farms, large scale farm business operation), farm workers, government professionals, Extension professionals, and community residents.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	4000	3000	0	0
Actual	4173	1431	0	0

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of trainings offered on soil, water, and air.

Year	Target	Actual
2009	20	30

Output #2

Output Measure

- Number of farmers trained on agricultural practices for air and water quality.

Year	Target	Actual
2009	200	167

Output #3

Output Measure

- Number of people trained on environmental regulations for soil, air and water quality.

Year	Target	Actual
2009	400	527

Output #4

Output Measure

- Number of farmers trained on soil fertility.

Year	Target	Actual
2009	300	915

Output #5

Output Measure

- Number of farmers trained on soil conservation practices.

Year	Target	Actual
2009	200	332

Output #6

Output Measure

- Number of people trained on watershed protection.

Year	Target	Actual
2009	100	20

Output #7

Output Measure

- Number of people trained on conservation and effective use of water resources.

Year	Target	Actual
2009	300	158

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of farmers that adopted the recommended practices for air and water quality
2	Number of farmers that comply with the soil, air, and water regulations.
3	Number of farmers that adopted the fertilization practices.
4	Number of farmers that adopted one or more soil conservation practices.
5	Number of farmers that established practices for the protection of watersheds.
6	Number of persons that adopted practices to improve water resources.

Outcome #1

1. Outcome Measures

Number of farmers that adopted the recommended practices for air and water quality

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	100	43

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
There are farms with contaminated areas that affect their neighborhoods. Some of the farms are located near watersheds that require good management practices. This affects not only the health and well-being of the humans living in these areas, but of their animals, crops, and environment as well.

What has been done
The farmers were oriented on air and water quality through trainings and educational material distributed.

Results
Of the 167 oriented farmers oriented, 43 adopted the recommended practices for air and water quality.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
141	Air Resource Protection and Management

Outcome #2

1. Outcome Measures

Number of farmers that comply with the soil, air, and water regulations.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	200	158

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The farmers had problems with the adoption of environmental regulations. Puerto Rico Extension Agents discussed the regulations of the PR Quality Environment Board, Environmental Protection Agency (EPA), and PR Department of Natural Resources & Environment with the farmers the, to help them understand the importance of adopting them and the consequences or negative impacts on their businesses of not doing so.

What has been done
PRAES agents held training meetings and conferences and distributed educational material on the environmental regulations.

Results
One hundred and fifty-eight (158) farmers, of 167 that were trained, comply with the regulations on air and water quality. Several laws were enforced by local and federal agencies.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
141	Air Resource Protection and Management

Outcome #3

1. Outcome Measures

Number of farmers that adopted the fertilization practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	250	349

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Fertilizer costs have increased during the past two years due to increase in the cost of raw material and imports. PRAES agents and specialists offered information on alternatives to chemical fertilizers and their effective use.

What has been done
PRAES specialists trained PR Department of Agriculture personnel, extension agents, and farmers on fertilization. Also farm visits and field demonstration tests were made. We coordinated soil analyses with the PR Department of Agriculture made nutrient recommendations for the commodities.

Results
Three hundred and forty-nine (349) farmers, of 527 trained, adopted the fertilization practices. More farmers are using foliar fertilizers and composting products.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships

Outcome #4

1. Outcome Measures

Number of farmers that adopted one or more soil conservation practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	150	156

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The erosion of our soils is causing the sedimentation of the lakes and the loss of fertility. PRAES agents oriented the farmers on soil conservation practices.

What has been done

PRAES personnel coordinated farm visits and meetings with Natural Resources Conservation Service (NRCS) and farmers in order to promote conservation practices and incentives programs.

Results
One hundred and fifty-six (156) farmers, of 915 that received orientation, adopted the soil conservation practices.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
104	Protect Soil from Harmful Effects of Natural Elements
112	Watershed Protection and Management

Outcome #5

1. Outcome Measures

Number of farmers that established practices for the protection of watersheds.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	60	17

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
There is great concern about the future of watershed's in Puerto Rico due to their reduced capacity to supply the required water for home consumption, farm operations and industrial uses.

What has been done
PRAES coordinated education efforts with agencies such as the PR Department of Natural Resources and Environment, the PR Environmental Quality Board, the Natural Resources Conservation Service (NRCS) and the Aqueduct and Sewer Authority. Educational material was prepared and distributed among the farmers to orient them on watershed protection.

Results
Seventeen (17) farmers, of 20 trained, adopted practices for watershed protection that include amendments to the Waste Disposal Plan and better fertilization management. Some farmers received incentives from the government.

4. Associated Knowledge Areas

KA Code	Knowledge Area

104	Protect Soil from Harmful Effects of Natural Elements
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management

Outcome #6

1. Outcome Measures

Number of persons that adopted practices to improve water resources.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	250	65

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The land suitable for agriculture is being used for the construction of new housing and roads. There are not enough water reservoirs to supply water for both uses (agriculture and human consumption).

What has been done
Extension agents offered training meetings and conferences to farmers and the general public on the conservation and efficient use of water resources.

Results
Sixty five (65) persons, 158 oriented, adopted practices to improve water resources of. Several farmers established systems to reuse the water.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Government Regulations
- Other (New agricultural policies)

Brief Explanation

There was a decrease in farm operations due to fewer incentives from the Department of Agriculture and an increase in fertilizer costs. New pests in our main crops caused less activity on the farms. The farmers are composting in order to substitute chemical fertilizers and are using the recommended conservation practices to reduce soil erosion. The coffee enterprise changed to partial and full shadow from no shadow. Tthis practice reduces the soil erosion in our mountain.

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- Case Study

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

Healthy: No matter what my size or income

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	80%			
704	Nutrition and Hunger in the Population	20%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	14.4	0.0	0.0	0.0
Actual	10.6	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
375239	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
187619	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

On August 31, 2009, we received approval of the proposal *Using Community Based Participatory to Improve Health in Children* (1RO1HL091826-01). This project, which consists of a two-year pilot study, started on September 1, 2009.

With this pilot study we expect to establish a solid basis to extend the program to all the municipalities of the Caguas Region and eventually to all of Puerto Rico. This larger study should help us evaluate the most effective intervention methodology to improve health in children, and help identify methods of implementation and evaluation of the program that are more effective than those currently used.

This report is based on what was accomplished before the proposal was accepted. The accomplishments of the pilot study

will be reported in next reporting cycle.

2. Brief description of the target audience

Extension professionals; parents; the person that plans/buys/prepares food for the family; low income families with small children or no children; personnel/students in schools; community leaders

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	8000	4000	4000	900
Actual	10918	3729	2271	44

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of nutrition classes that integrated one or more of the following components: nutrition, healthy weight, food preparation, and/or food security.

Year	Target	Actual
2009	100	207

Output #2

Output Measure

- Number of people who completed a nutrition class that integrated one or more of the following components: nutrition, healthy weight, food preparation, and/or food security.

Year	Target	Actual

2009	1500	3660

Output #3

Output Measure

- Number of people taught in Farmers' Markets.

Year	Target	Actual
2009	500	3415

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of people who are confident that they can they can prepare meals for their family that are inexpensive and of high nutritional value and adopted one or more of the recommended practices for healthy food preparation.
2	Number of people that have adopted one or more of the recommended practices to improve the nutritional value of their diet.
3	Number of people understand and have adopted one or more of the tenants of the Health at Every Size paradigm.
4	Number of people who adopted one or more practices to improve their food security.

Outcome #1

1. Outcome Measures

Number of people who are confident that they can they can prepare meals for their family that are inexpensive and of high nutritional value and adopted one or more of the recommended practices for healthy food preparation.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	300	1559

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
People eat meals and snacks, not individual food items. The number of people who eat meals away from home has been constantly rising until the recent economic downturn. In order to reverse this trend people must feel that they have the time to prepare meals and are competent that they can prepare nutritious meals that their families will enjoy.

What has been done
Two thousand two hundred and fifty-one (2,251) adult participants in nutrition courses that offered lessons on food preparation. During 2009 the PRAES home economists were asked to supply recipes developed by their program participants for inclusion in a recipe book: Tasty and Healthy Recipes of the Extension Service. Criteria were established for the Food Guide Pyramid foods groups, as well as sugars, fats, and salt included in a recipe. All recipes had to include two or more foods cultivated or potentially cultivatable in Puerto Rico. A competition held by Milagros Santiago de Santana, home economist of the Municipality of Peñuelas, with 18 people participating and 8 recipes included in the cookbook. The competition held by Jean Hernández, of the Municipality Ceiba, with the collaboration of eight volunteer leaders generated so much interest that they plan to hold another competition next year.

Results
Increased meal preparation at home means improved nutritional value of family meals, more enjoyment of home prepared foods and potentially less cost for feeding an individual or a family. The home economists reported that 1,559 people adopted one or more recommended practices related to food preparation. Of these, 865 people recognized that they can pre¬pare a meal for their family or for themselves, 1,054 are preparing family meals more frequently, 794 prepare one dish meals, 950 use less fat in food preparation, 441 plan their meals based on rice with beans or starchy vegetables served with 1 or 2 ounces of meat.;309 people invented their own recipe, 720 increased the use of herbs and spices in their food preparation, and 454 decreased their use of salt. One thousand one hundred and fifty-eight (1,158) people can prepare foods that look appetizing and have an agreeable taste and 899 use less pre-prepared ingredients.

After careful screening of the Food and Nutrition Specialist, Dr. Ann Macpherson, more than 170 recipes were included. Fifty-two (52) home economists had participants that supplied recipes for the cookbook.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #2

1. Outcome Measures

Number of people that have adopted one or more of the recommended practices to improve the nutritional value of their diet.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	400	3187

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
To be healthy we must assute tht what we eat provides adequate nutrition. If not, the quality of life of an individual can be adversely affected.

What has been done
The PRAES home economists taught 207 courses in foods and nutrition, with a total of 2,251 adult participants. They had contact with 5,638 additional people who participated in educational activities that were not part of a course. In addition, 1,409 youth and children completed non formal education courses in nutrition.

Results
The home economists reported that 2,053 (91%) people adopted one or more practices to improve the nutritional value of what they eat; 927 can identify whole grains, and 702 increased their consumption of whole grains. In addition 1,222 people increased their fruit intake, 1,210 their vegetable intake, and 598 limited their meat intake to 1-2 ounces per person served, and 1,048 now serve milk as part of their meals. Substitution of oils for fats was accomplished by 890 people, and 1,026 decreased their consumption of beverages based on sugar and water. Also, 1,134 (80%) children and youth reported having improved their nutritional habits; 699 increased fruit and vegetable consumption; 520 increased whole grain consumption; 545 decreased their soda beverages consumption.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #3

1. Outcome Measures

Number of people understand and have adopted one or more of the tenants of the Health at Every Size paradigm.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	300	999

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Obesity has been identified as a major health concern. However, finding an effective method to deal with it remains a challenge, as there is little evidence that weight control is the answer.According to most people have regained whatever weight they lost within five years. A 2007 review of the literature showed that one-third to two-thirds regain more weight than they lost on their diets (Mann, et.al. 207) Medicare's search for effective obesity treatments: diets are not the answer.

What has been done
In 2007 a curriculum was introduced to the PRAES home economists based on the Health at Every Size Paradigm. The proposal "Using Community Based Participatory Research to Improve Health in Children" (1RO1HL091826-01) was accepted by NIH. It focuses on improving health of all children, whether they be thin, average or fat. It is based on the community members adopting improved attitudes, norms and self efficacy in three areas: stigmatization of fat people, moving more, and eating more fruits and vegetables.

Results
People who are more content with their appearance and how they define themselves are more likely to adopt new practices than those who are unsatisfied with their appearance and how they define themselves. The PRAES home economists reported that 999 people adopted one or more recommendations of this curriculum; of these, 609 report that they recognize that they are attractive whatever their weight or size, 371 that they can compliment another person without reference to their weight or size, 936 increased their physical activity, and 653 began doing regular physical activity.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #4

1. Outcome Measures

Number of people who adopted one or more practices to improve their food security.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	225	942

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
It is said that when the mainland gets a cold, Puerto Rico has pneumonia. The economic situation in Puerto Rico is very challenging, with a number of people having lost their jobs and more job losses are anticipated for 2010. People attempt to lower their cost of living to adapt to their new economic reality by reducing their everyday expenses, such as food.

What has been done
During 2009 PRAES home economists taught 207 courses in food and nutrition and had contact with 5,638 additional people who participated in educational activities that were not part of a course.

Results
PRAES home economists reported that 942 people adopted one or more recommended practices to assure food security, and 467 people feel proud that they can prepare delicious meals with limited income. Practices adopted include: selection of alternatives of equal or better nutritive value (790), limiting meat intake to 1-2 ounces per person served, in compliance with the Food Pyramid for Puerto Rico, 2005 (598), planting fruits and vegetables in a garden or more limited space (847), use of fruit from trees already planted in their backyard (923), making a shopping list (893), and using supermarket specials (669). These practices resulted in 414 people who now report that they have sufficient food in their homes to feed their family during the entire month.

4. Associated Knowledge Areas

KA Code	Knowledge Area
704	Nutrition and Hunger in the Population

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Competing Programmatic Challenges
- Other (Focus Prog other Agencies)

Brief Explanation

The most important external factors in our program are the approval of the proposal "Using Community Based Participatory Research to Improve Health in Children" and the economic downturn. The latter has resulted in a hiring freeze, limited budget to attend audiences that are distant from the university campus, and a special justification to employ anyone. Due to the proposal these factors have had minimal impact on what we do. The biggest challenge is the prevalent idea that obesity is a major health problem and that the way to solve it is to have all who are "overweight", and especially "obese" lose weight. Since our program goes against this norm, some home economists are reluctant to teach the Health at Every Size paradigm. Hopefully we will have positive results from the proposal and can show that health can be improved even though there is no change in weight.

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)
- Comparison between locales where the program operates and sites without program intervention
- Other (Assessment of Interests & Needs)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 12

1. Name of the Planned Program

Management of Rangeland and Forestry Resources

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
121	Management of Range Resources	40%			
122	Management and Control of Forest and Range Fires	5%			
123	Management and Sustainability of Forest Resources	20%			
124	Urban Forestry	30%			
133	Pollution Prevention and Mitigation	5%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	5.2	0.0	0.0	0.0
Actual	4.5	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
159299	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
79650	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conducted workshops and meetings.
Collaborated with government agencies (DNRA, USDA-NRCS and others).
Collaborated with our partners in the University of Puerto Rico and other educational institutions.
Conducted conference/training related to range management.

Conducted conference/training related to urban forestry.
Participated in radio programs.
Offered advice when clientele visit the office.
Conducted a campaign on the prevention of forest fires.

2. Brief description of the target audience

County agents, home economists, government personnel, community residents, youth 13-18 years old, farmers, and homeowners.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	1500	2000	0	0
Actual	795	785	30	249

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of farmers trained in range management.

Year	Target	Actual
2009	250	214

Output #2

Output Measure

- Number of people that participated in workshops, conferences or meetings on urban forestry.

Year	Target	Actual
2009	300	1025

Output #3

Output Measure

- Number of persons trained on forest and rangeland fire prevention.

Year	Target	Actual
2009	75	26

Output #4

Output Measure

- Number of persons trained on pollution prevention and mitigation of natural resources.

Year	Target	Actual
2009	75	11

Output #5

Output Measure

- Number of agency collaborations established.

Year	Target	Actual
2009	75	7

Output #6

Output Measure

- Number of people trained on natural resources and forest conservation.

Year	Target	Actual
2009	200	168

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of farmers that improved their pastures.
2	Number of persons that adopted one or more practices on natural resources and forest conservation.
3	Number of reforestation projects established.
4	Numbers of persons that adopted one or more practices on fire prevention in forests and rangelands.
5	Number of farmers that adopted the recommended range management practices.
6	Number of acres in improved pastures.
7	Number of persons that adopted practices for pollution prevention and mitigation of natural resources.

Outcome #1

1. Outcome Measures

Number of farmers that improved their pastures.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	100	261

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Due high costs of feed ingredients and labor the farmers needed to adopt management practices to improve their pastures, increase yields, and minimize the use of livestock feeds. Puerto Rico Extension Service (PRAES) and Natural Resources Conservation Service (USDA-NRCS) joined efforts to help farmers to adopt good management practices necessary to improve their pastures.

What has been done
Educational activities, workshops, newsletters and farm visits were conducted to promote and encourage the use of better management practices. Implementation of BMP's on their farms helped farmers to increase and improve pasture production. Stocking rates, rotational grazing and adequate fertilization practices used by farmers help to improve their pastures.

Results
As a result of implementing BMP's on their farms, 261 farmers improved their pastures utilizing manure application and grazing management practices, thus reducing costs of chemical fertilizers and pasture reseeding.

4. Associated Knowledge Areas

KA Code	Knowledge Area
121	Management of Range Resources

Outcome #2

1. Outcome Measures

Number of persons that adopted one or more practices on natural resources and forest conservation.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	100	61

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Agricultural practices and infrastructure development impacted adversely our natural resources and forest lands. Deforestation of high erodible soils contribute to increase erosion, losing the fertility of the soils and increasing the sedimentation of rivers and affect our costal areas destroying the coral reefsl.

What has been done
Workshops, educational campaigns, publications and on-site demonstrations of management practices on natural resources and forest conservation were conducted. Also, educational activities involving 4-H members (camps) were conducted to promote natural resources and environmental concerns in the youth about the fragility of the environment.

Results
Sixty-one persons were impacted through the educational activities conducted and adopted one or more practices on natural resources and forest conservation. Some of the practices adopted were protection of watersheds, recycling of paper and waste material, and the preparation of compost.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
124	Urban Forestry

Outcome #3

1. Outcome Measures

Number of reforestation projects established.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual

2009	20	33

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Global warming is a threat to our environment. Rising temperatures are changing significantly our climate and causing the rise of sea levels. Global warming is occurs as we emit greenhouse gasses into the atmosphere. Tropical reforestation is one of the most effective methods of combating the emissions of gasses to the atmosphere.
Communities and citizens affected by weather (dry and wet seasons) changes in climate patterns developed reforestation projects to control pollution, soil erosion, and the sedimentation of rivers and streams.

What has been done
Community leaders approached government and non-government agencies, schools, and community citizens to create awareness, and promote and develop reforestation projects. Promoting and developing reforestation projects helps to create new environmental leaders.

Results
Thirty-three (33) reforestation projects were established as a result of community and farmers' efforts. Government agencies (PRAES, DNRA, others) backed up the projects offering technical support, and providing seedlings and educational materials, while community members did the work. The creation of reforested areas will help to reduce soil erosion and sedimentation in the future, reducing the danger of flash floods.

4. Associated Knowledge Areas

KA Code	Knowledge Area
124	Urban Forestry

Outcome #4

1. Outcome Measures

Numbers of persons that adopted one or more practices on fire prevention in forests and rangelands.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	30	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
122	Management and Control of Forest and Range Fires

Outcome #5

1. Outcome Measures

Number of farmers that adopted the recommended range management practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	170	153

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Range farmers affected by weather conditions and the economic situation were trained in range management practices. The adoption of recommended practices should reduce farm costs and improve sustainability of the farm.

What has been done
PRAES range specialist and extension agents joined efforts with USDA-NCRS, and the PR Department of Agriculture to promote the adoption of range management practices through educational activities and methods demonstrations.

Results
Three hundred and sixty-five (365) farmers adopted the recommended range management practices improving soil condition and range production, and reducing soil erosion.

4. Associated Knowledge Areas

KA Code	Knowledge Area
121	Management of Range Resources

Outcome #6

1. Outcome Measures

Number of acres in improved pastures.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	500	11704

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Livestock's producers are looking for cost effective ways to improve pasture productivity to minimize high costs of supplemental feeds and inorganic fertilizers.

What has been done
Extension agents conducted training, farm visits, circular letters, demonstration workshops, open houses, rotation practices and development of waste management system in farms to promote the adoption of pasture management practices, herbicide treatments and improve soil fertility to improve pasture production.

Results
Eleven thousand seven hundred and four (11,704) acres in improved pastures were established by farmers in Puerto Rico. Extension agents helped farmers to develop waste management systems to reduce the use of inorganic fertilizers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
121	Management of Range Resources
123	Management and Sustainability of Forest Resources

Outcome #7

1. Outcome Measures

Number of persons that adopted practices for pollution prevention and mitigation of natural resources.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	500	11

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
(no copié el impact statement pues fue un impacto negativo y no hay una explicación para este número tan bajo en el texto).

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Other (Availbality economic incentives)

Brief Explanation

During the past years Puerto Rico suffered the effects of an economic recession and is still being affected by that recession. Farm costs have increased and farmers have changed their priorities to lower costs and minimize the economic impact.

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- Other (Surveys)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 13

1. Name of the Planned Program

Animal Protection

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
311	Animal Diseases	40%			
312	External Parasites and Pests of Animals	25%			
313	Internal Parasites in Animals	25%			
315	Animal Welfare/Well-Being and Protection	10%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	5.1	0.0	0.0	0.0
Actual	6.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
212399	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
106200	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Trainings.
Establish collaborations with local and federal agencies.

2. Brief description of the target audience

Agricultural producers, extension professionals, community leaders, and other professionals.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	2800	2400	0	0
Actual	1539	1985	0	0

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	1	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of persons trained in control and prevention of diseases.

Year	Target	Actual
2009	350	904

Output #2

Output Measure

- Number of persons trained in bio-security program.

Year	Target	Actual
2009	300	874

Output #3

Output Measure

- Number of persons trained in control and prevention of internal and external parasites.

Year	Target	Actual
2009	300	929

Output #4

Output Measure

- Number of persons trained in animal welfare and protection.

Year	Target	Actual
2009	200	261

Output #5

Output Measure

- Number of collaborations established.

Year	Target	Actual
2009	30	39

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of persons that adopted disease control and prevention practices.
2	Number of persons that reduced the number of diseased animals on their farm.
3	Number of persons that adopted a bio-security program.
4	Number of persons that adopted practices in animal welfare and protection.
5	Number of persons that adopted practices for the control of parasites on their farm.

Outcome #1

1. Outcome Measures

Number of persons that adopted disease control and prevention practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	300	496

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
When animal diseases became a threat to people, no systematic detection or control system was established to deal with it. Today an international initiative has been established to respond to disease outbreak. This involves the construction of laboratory facilities, as well a personnel in disease field. New regulations for food safety have changed the traditional practices to deal with animal diseases. The farmers have to establish preventive measurements in their facilities. They have to monitor any animal movement in their facilities from outside to protect themselves from any unwanted disease.

What has been done
Workshops, record keeping, vaccination programs, circular letters and good management practices were promoted by PRAES personnel.

Results
Four hundred and ninety-six (496) persons acquired knowledge about recommended farm production practices regarding control and preventive programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
311	Animal Diseases
312	External Parasites and Pests of Animals
313	Internal Parasites in Animals

Outcome #2

1. Outcome Measures

Number of persons that reduced the number of diseased animals on their farm.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	200	524

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
During the past years the tendency has been to increase the number of animals in the farm. This generated issues of health maintenance of the animals living on the farm. The farmers did not have an effective program to deal with farm animal diseases. Few prevention and control practices are taken to reduce the incidence of disease. The more animals that are sick, the less profit the farmer will have.

What has been done
Puerto Rico Agricultural Extension Service personnel promote the identification of farm animals and keep individual records for large animals or flock records for small animals. These help to effectively treat the animals and culling the non-productive ones. Support from the Department of Agriculture, Veterinary Division, was received in this initiative.

Results
A total of 524 persons have benefited from this initiative of the Agricultural Extension Service and local Veterinary Services.

4. Associated Knowledge Areas

KA Code	Knowledge Area
311	Animal Diseases
315	Animal Welfare/Well-Being and Protection

Outcome #3

1. Outcome Measures

Number of persons that adopted a bio-security program.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual

2009	50	41

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
311	Animal Diseases
315	Animal Welfare/Well-Being and Protection

Outcome #4

1. Outcome Measures

Number of persons that adopted practices in animal welfare and protection.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	100	390

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Productivity of animals has increased through the use of animal confinement, genetic selection, feed rations and the development of medications. These have caused criticism of the welfare of farm animals. Animal welfare is a prominent issue in many countries. New animal welfare bills were introduced in recent years in the US Congress.

The global concern of animal welfare has changed production practices and promoted regulation to protect animal rights. It has contributed to changes in the production and management practices against farm animal confinement, transportation, and slaughter.

What has been done
Through farm visits, PRAES personnel have disseminated information about regulations governing animals under confinement. Adoption of management practices regarding cleanliness, sanitation, ventilation, feed quality, and floor space were emphasized.

Results

Three hundred and ninety (390) persons benefited from the information received through PRAES personnel.

4. Associated Knowledge Areas

KA Code	Knowledge Area
315	Animal Welfare/Well-Being and Protection

Outcome #5

1. Outcome Measures

Number of persons that adopted practices for the control of parasites on their farm.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	100	570

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The proper management of farm animals is essential for the well-being of the animals and the operation's profitability. Proper management practices permit the animals to grow to maximum size, mature, reproduce, and stay healthy.

The common parasites external and the internal affect animals. Both cause income loss and use the animal as host using its body for living. The resources the parasites consume from animals could be used by the animals themselves. It causes condemnations at slaughter house. Animals produce more if they are healthy, therefore providing increased profits to the farmer.

What has been done
PRAES agents delivered information regarding the importance of keeping animals free of parasites. They also oriented farmers on importance of maintaining the farm facilities clean, all animals identified, and new animals entering the farm in good health.

Results
Five hundred and seventy (570) persons benefited from the information and orientation received from Extension personnel.

4. Associated Knowledge Areas

KA Code	Knowledge Area
312	External Parasites and Pests of Animals
313	Internal Parasites in Animals

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Other (Economic incentives)

Brief Explanation

The tough economic conditions have impacted all countries around the world. Puerto Rico has been no exception. Therefore, farmers have to be more cautious in terms of how they manage their costs and their overall business, as this will determine their future success.

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

1. Evaluation Studies Planned

- Other (Focal groups)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 14

1. Name of the Planned Program

Community Resources Development

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	100%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	6.4	0.0	0.0	0.0
Actual	4.9	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
173460	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
86729	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Community assemblies, gatherings, and other meetings to establish rapport and explore needs and aspirations were carried out.

Conference/training were offered in areas of social investment, human, and social capital, marketing, market study and analysis, identification of self-employment opportunities, and community-based business.

Participative Action Research strategies such as "reading the streets," life histories, focal groups and informal interviews were carried out.

Development and implementation of "tool box" material that is empowering community participants to take advantage of the endless amount of possibilities for community oriented economic initiatives.Strategic alliances with government agencies, non-governmental organizations and community institutions to collaborate in the promotion of community-based economic initiatives were established.

2. Brief description of the target audience

Community participants, community leaders, extension professionals and other professionals.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	550	2000	0	0
Actual	942	258	0	0

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of persons trained in community-based business.

Year	Target	Actual
2009	75	319

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of persons applying the recommended practices in the process of developing a community-based business.
2	Number of community-based businesses established.

Outcome #1

1. Outcome Measures

Number of persons applying the recommended practices in the process of developing a community-based business.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	25	224

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Due to the collapse of Puerto Rican government's role as the promoter of employment generation and economic investment that leads to the creation of new job opportunities, most communities on the Island are desperately seeking employment opportunities. Such as municiaplities of the mountain region, like Orocovis, which were experiencing high unemployment levels, lacked local markets where the farmers and local producers might sell their produce; the Bay of Guayama, where local fisheries and fishing villages are being displaced by coastal development in real estate, industry, and tourism, thus losing ground and economic presence; and the coatal municiaplity of Ceiba, where residents are challenged to reinvent their businesses and business district after the closure of a 60-year old naval base.

What has been done
With the assistance of the local agricultural agent, Miraflores community residents in Orocovis created a local food and farmer's market to attract customers from nearby communities. They also created the "Blood Sausage Fair", which generated resources to cover the market's operational expenses and future fairs. DRC Specialists worked intensively with the local Fishers' Cooperative at "Puerto de Jobos" in Guayama bay,to reorganize and retrain these experienced sea agriculturalists as agribusiness persons . At Ceiba, the local home economist helped organize a group of housekeepers who created a local artisans' market and are ready to receive tourists as there are government plans to turn the former naval base into a cruise ship dock.

Results
Both Orocovis and Ceiba's residents are generating incomes from the economic activities they created and developed. Puerto de Jobos Cooperative in Guayama has developed an ambitious business plan that has led to the writing of a proposal for a 6-figures grant that will bring back this fishers' village to its previous splendor. The relevance and contribution of the CRD program of the Agricultural Extension Service in Puerto Rico is evidenced by the trust and confidence that our stakeholders have placed in us by seeking new training in skills for self-employment opportunities to confront these times of economic crisis.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #2

1. Outcome Measures

Number of community-based businesses established.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	5	18

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Puerto Rico Agricultural Extension Service has historically offered training opportunities in Agriculture and Family Sciences' related activities that can empower stakeholders to create self-employment opportunities. However, most of the participants being trained were using acquired skills for personal and family benefit (i.e., household internal production that would reduce household expenditures) and not as an economic activity for the market that would increase personal and family income. With the new CRD emphasis through the Community Entrepreneurial "Tool Box" we have experienced an increase in the creation community and family based micro-business and economic oriented initiatives.

What has been done
Comprehensive training of field personnel on the Community Entrepreneurial "Tool Box" workshop series has led to the training of stakeholders (who had previous AES sponsored artisanship, craftsmanship, agricultural, and other related skills training) in entrepreneurial skills and small business creation by AES personnel. This has led to an increase in the creation of community and family based micro-businesses and economic oriented initiatives.

Results
In a 1-year period, since the introduction of the Community Entrepreneurial "Tool Box", 18 new community and family-based micro-enterprises have been established or restructured. Some are community service oriented, such as the Maizales, Lijas and Asomante community aqueduct administration enterprises, the Puerto Jobos fisherman's services cooperative, and Miraflores farmer's market; others are individual or family oriented in areas of Family Sciences such as domestic services, food production, and sewing and tailoring. We are also experiencing and increase in the creation of small-scale agricultural enterprises that vary from fruit and indigenous tree production, minor fruits, and vegetables production; as well as fisheries and ruminants breeding. Thus, Puerto Rico CRD has been able to refocus both agricultural and Family Science training and skill acquisition opportunities from that of household and the promotion of already established business production, to that of new community oriented and small business enterprises.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Public Policy changes
- Competing Public priorities

Brief Explanation

In January 2009 a new government administration took office in Puerto Rico. Contrary to other U.S. jurisdictions, changes in government administrations in Puerto Rico are not characterized by either continuation of existing public policy initiatives or by a smooth transition between outgoing and incoming government officials. Accordingly, many coordination efforts between government agencies and our CRD Program are in the process of being adapted or renegotiated to fit new government priorities and plans.

As elsewhere, Puerto Rico is experiencing a dramatic economic crisis. However, contrary to the U. S. National Recovery Plan, the Puerto Rican Government is dealing with such crisis by reducing, rather than increasing, government expenditures and employment. This has led to 58,000 new people in the unemployment rolls. This detrimental factor has positively affected output #1 and outcome #1. The relevance and contribution of the PRAES CRD program is evidenced by the trust and confidence that our stakeholders have placed in us by seeking new training in skills for self-employment opportunities to confront these times of economic crisis.

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)
- Case Study

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 15

1. Name of the Planned Program

Economics, Marketing and Policy

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	40%			
602	Business Management, Finance, and Taxation	30%			
604	Marketing and Distribution Practices	20%			
610	Domestic Policy Analysis	10%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	6.5	0.0	0.0	0.0
Actual	6.5	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
230099	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
115050	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Farm visits
Trainings
Seminars
Meetings
Educational material (publications, newsletters, CDs)

2. Brief description of the target audience

Farmers, agricultural entrepreneurs, Extension professionals.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	300	900	0	0
Actual	3765	1604	0	0

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	1	0	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of trainings, courses and seminars offered.

Year	Target	Actual
2009	20	45

Output #2

Output Measure

- Number of farmers and agricultural entrepreneurs trained.

Year	Target	Actual
2009	300	669

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of farmers and agricultural entrepreneurs that adopted one or more economic practices.
2	Number of farmers and agricultural entrepreneurs that utilize economic tools to take effective economic decisions to improve their business.

Outcome #1

1. Outcome Measures

Number of farmers and agricultural entrepreneurs that adopted one or more economic practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	75	125

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Our farmers need to improve their abilities and capacities to manage the agricultural business and profit from the operation. Puerto Rico Agriculture Extension Service has the personnel and programs to educate the farmers.

What has been done
PRAES personnel offered training and short courses on farm management, agribusiness, value added and marketing. PRAES developed the Farm Management Program, the Women in Agriculture initiative, and Agribusiness for new farmers; and maintained collaborations with the Farm Service Agency, the Puerto Rico Department of Agriculture, and the Puerto Rico Farm Bureau.

Results
Of 250 farmers and agricultural entrepreneurs that completed courses regarding agricultural economics, 125 (50%) adopted one or more economic practices. They prepared farm plans, expense and income reports, payrolls, andfarm inventories and established new strategies to market their products locally. A computer program was developed to keep farm records and make business analyses.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
604	Marketing and Distribution Practices
610	Domestic Policy Analysis

Outcome #2

1. Outcome Measures

Number of farmers and agricultural entrepreneurs that utilize economic tools to take effective economic decisions to improve their business.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	30	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
604	Marketing and Distribution Practices
610	Domestic Policy Analysis

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)
- Comparison between locales where the program operates and sites without program intervention
- Other ()

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 16

1. Name of the Planned Program

Animal Production

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	15%			
302	Nutrient Utilization in Animals	20%			
303	Genetic Improvement of Animals	10%			
305	Animal Physiological Processes	10%			
306	Environmental Stress in Animals	10%			
307	Animal Management Systems	20%			
308	Improved Animal Products (Before Harvest)	15%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	15.1	0.0	0.0	0.0
Actual	15.1	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
555779	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
277889	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conducted seminars, meetings and workshops.
Offered counseling and orientation
Established collaborations with other local and federal agencies and other University partners on research and extension programs.

Worked in collaboration with the communcations media.
Write and submit extension and research proposals.

2. Brief description of the target audience

Farmers, Extension professionals, government personnel, and private professionals.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	3400	5000	0	0
Actual	4173	4310	0	0

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	4	1	
Actual	2	4	6

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of farmers trained on animal production.

Year	Target	Actual
2009	300	1220

Output #2

Output Measure

- Number of farmers trained on control of environmental stress on animals.

Year	Target	Actual
2009	100	848

Output #3

Output Measure

- Number of farmers trained on animal products.

Year	Target	Actual
2009	70	874

Output #4

Output Measure

- Number of collaborations established.

Year	Target	Actual
2009	70	135

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of persons that improved efficiency of animal production.
2	Number of persons that adopted one or more practices to control heat stress.
3	Number of persons that improved the quality of their product.
4	Numbers of persons that improved the animal reproduction practices.
5	Number of persons that improved the nutrient utilization practices in animals.
6	Number of persons that increased animal production after adopting the recommended practices.

Outcome #1

1. Outcome Measures

Number of persons that improved efficiency of animal production.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	160	164

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Puerto Rico has a small area for agricultural production. To be successful, animal industries depend on the effective production of animal and plant products. The efficiency is governed by profitability of farm operation costs. When considering land availability for production, we have to think about how to increase production per unit of land or indoor space. With proper technology use, more production can be obtained without damaging the environment. Production efficiency is relative to effective utilization of feed nutrients, while reducing the nutrient loses from the operation.

What has been done
PRAES field agents and specialist conducted workshops, trainings, field demonstrations, field trips and direct contact to transfer information about efficiency in livestock production and help farms deal with nutritional aspects.

Results
One hundred sixty-four (164)persons improved efficiency of animal production in their farms as a result of orientation received.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

Outcome #2

1. Outcome Measures

Number of persons that adopted one or more practices to control heat stress.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	50	200

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

Outcome #3

1. Outcome Measures

Number of persons that improved the quality of their product.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	50	300

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

Outcome #4

1. Outcome Measures

Numbers of persons that improved the animal reproduction practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	60	250

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

Outcome #5

1. Outcome Measures

Number of persons that improved the nutrient utilization practices in animals.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	90	210

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

Outcome #6

1. Outcome Measures

Number of persons that increased animal production after adopting the recommended practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	125	244

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
305	Animal Physiological Processes
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other ()

Brief Explanation

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

1. Evaluation Studies Planned

Evaluation Results

Key Items of Evaluation