

2011 University of Puerto Rico Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

This accomplishment report covers the period from October 1, 2010 to September 30, 2011. During this fiscal year, the Puerto Rico Agricultural Extension Service (PRAES) used 167.81 FTEs, a reduction of 5.49 FTEs of the 173.3 planned for FY 2011 -2015. This reduction was due to personnel retirement. These positions were not filled due to economic restrictions in our budget.

The goals in the PRAES 2011 POW were met due to short courses trainings, on-site demonstrations, farm visits, the use of mass media, and communications technology, such as the internet, which was used for distance training and web pages. To cover the different subject matter in areas in which PRAES lacked personnel (due to retirement), we worked jointly with Puerto Rico Agriculture Experiment Station personnel and College of Agricultural Sciences faculty, which dedicated a percentage of their staff time to work with PRAES.

PRAES signed multiple agreements and/or made collaborative efforts throughout the island during fiscal year 2010-2011. 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.

Extension maintained close relations with government agencies, decision makers, research scientists, and the clientele helping them to gain insight on what has happened and what is likely to happen during the next years. The staff of the local Extension offices continued relations with key leaders such as: mayors, senators, representatives, directors, officials of organizations, and business people interested in/or related to Extension's agenda. They invited these stakeholders to participate in Extension activities and in the Stakeholder Input Process meetings and meetings of the Community Resources Development Committee.

The collaborators from the public sector are the Departments of Agriculture, Education, Health, Consumer Affairs, Labor and Human Resources, Transportation, Drug Abuse Prevention, and other government agencies (The Police Department, the Water and Sewer Authority, the Electric Energy Service, Natural Resources, and the Youth Affairs State office). Also, we coordinate with the USDA agencies such as Farm Service, Natural Resources Conservation Service, Rural Development, Food & Nutrition Service, Food Safety and Inspection Service, APHIS - PPQ, EPA, and Forest Service. From the private sector, people from banks, cooperatives, and industry (agricultural, pharmaceutical, textiles, etc.), as well as religious, civic, and social leaders from different organizations, participated in the assessment process determining local needs, offering their collaboration, and involving their organizations in the search of solutions to problems.

PLANNED PROGRAMS:

During FY 2009, in order to use resources more effectively and reduce the paper burden to comply with the Paper Reduction Act, we had consolidated planned programs from 16 to 7. However, with the emergence of the five new emphasis areas, we had to reorganize our planned programs and refocus priorities to meet the new goals. With the addition of the new goals and refocusing of our consolidated planned programs, some of which had to be split up, we had 11 planned programs for the plan of work 2011-2015. These are: 1) Plant Systems; 2) Animal Systems; 3) Management of Rangeland and Forestry Resources/Soil, Water, and Air; 4) Climate Change; 5) Sustainable Energy; 6) Global Food Security and Hunger; 7) Family Well-being; 8) Food Safety; 9) Childhood Obesity; 10) Strengthening Youth Life Skills, Leadership and their Community; and 11) Community Resources Development by Means of Fostering

Sustainable Communities.

The planned programs in the Agriculture, Marketing and Natural Resources program area had a total amount of 73.9 expended FTEs; in Family and Consumer Sciences a total of 36.3 expended FTEs; Four-H and Youth Development a total of 30.7 FTEs; and Community Resource Development a total of 26.9 FTEs for a global sum of 167.8 FTEs.

The Plant Systems and Animal Systems planned programs focused their efforts in strengthening the Food Security emphasis area. To avoid duplicity when informing their indicators the agents include this emphasis area under the planned program of their main enterprise.

In some cases we have indicators that seem to be static over time, this responds to the fact that we have a dynamic clientele which is incorporated or renewed annually.

In PRAES the specialists are the ones in charge of the preparing the peer reviewed publications. The AMNR program area has the most specialists, therefore it has a higher total amount of publications. In areas such as CRD the specialists comprise 2 FTEs and in Four-H 1.25 FTEs. We have no specialist for the Childhood Obesity planned program, but have plans for recruiting a new specialist in this area for 2013.

AGRICULTURE, MARKETING, AND NATURAL RESOURCES

1. Plant System

The total expended FTEs in the Plant Systems planned program was reduced from 30.33 FTEs in 2010 to 26.62 during 2011. For FY 2011, we took indicators relating to Engineering Biosystems from the Plant Systems and Animal Systems planned programs and created the Sustainable Energy planned program.

Through the crop production program we seek ways to help farmers increase the use of improved production practices as well as good agricultural practices (GAP) to achieve better growth management and improved product quality. We will continue to promote the adoption of the best plant protection management practices and to develop IPM systems that protect the environment, conserve the natural resources, and contribute to the competitiveness, profitability, and sustainability of Puerto Rico's agriculture. In engineering our efforts will focus on promoting better irrigation and drainage practices, the effective operation and maintenance of equipment and soil and water conservation practices. Through economic, marketing and policy the farmers will receive the necessary education and technical assistance to strengthen their abilities as managers and entrepreneurs.

Puerto Rico Agriculture Extension Service (PRAES) trained 8,183 persons on plant management, products quality, value-added, pesticide use, IPM, pesticide application, and commercial pesticide application. Of these, 1,604 adopted one or more recommended practices of the plant management, 700 increased production in crop commodities, and 1,173 increased the quality in crop commodities.

PRAES managed an integrated citrus management program through the Quality and High Performance Units (UCAR, for its initials in Spanish) project, in cooperation with the Department of Agriculture. One of its goals was to increase fruit quality on citrus crops. One hundred (100) farmers were trained through educational materials, conferences and on-site demonstration methods in pruning, fertilization and integrated management practices, including weed management, citrus greening management, sanitation, and timely use of pesticides. An evaluation was made with 30 farmers (15 regular farmers and 15 farmers under UCAR) to see how the program implemented would increase fruit quality on citrus.

After one year, 30 farmers increased fruit quality on citrus. Production of marketable fruits per acre of the farmers in the UCAR project in the municipalities of Lares and Utuado was 83 %, compared to 62% of the regular farmers (not in the UCAR project). There was an increase of 21% in marketable fruits per acre or an increase of \$1,470 per acre.

2. Animal Systems

For FY 2011, we took indicators relating to Engineering Biosystems from the Plant Systems and Animal Systems planned programs and created the Sustainable Energy planned program. The total expended FTEs in the Animal Systems planned program was reduced from 22.64 FTEs in 2010 to 13.87 during 2011.

Although we had this decrease in FTE's, resulting from the redistribution of FTEs to the Sustainable

Energy planned program, retirement of personnel, and budget reductions, we were able to reach more farmers and general public (Output 1, 2., 3) due to our joint collaborations with other agencies such as Department of Agriculture through Dairy and Beef Cattle programs, communications media, and an increase in the amount of educational material distributed, workshops, trainings, and seminars.

By focusing on recordkeeping to monitor farm animal production and to improve production practices, we were able to increase the number of persons adopting disease control and prevention practices, animal welfare and protection practices, practices for the control of parasites, reducing the number of diseased animals on their farm and improving product quality (Outcomes 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 21). Keeping the best productive animals and culling the least productive also helped farmers to increase farm income and reduce operational costs.

The availability of tools such as computers makes the recordkeeping process easier to follow and more effective. It also helps farmers in decision making on the use of animals of greater genetic traits, the control and prevention of diseases, the establishment of a bio-security program, and the improvement of facilities or creation of new ones to meet animal confinement regulations.

Educational efforts were also aimed at the effective operation and maintenance of farm equipment and the promotion of water conservation practices. This includes keeping the farm facilities clean, establishing a vaccination program, and keeping the animals by age groups, and promoting bio-security among farmers. Modern techniques are promoted to improve the efficiency of production including farm management, business management, finance and taxation, marketing and distribution practices, and domestic policy analysis.

PRAES trained 3,057 persons in control and prevention of diseases in animals, bio-security programs, control and prevention of internal and external parasites, animal welfare and protection, control of environmental stress on animals, animal production, and animal products.

One hundred and seventy-six 176 persons oriented increased animal production after adopting recommended practices, and 181 farmers and agricultural entrepreneurs adopted one or more recommendations in economic practices.

3. Management of Rangeland and Forestry Resources/Soil, Water, and Air

For FY 2011 we took indicators dealing with climate matters from the Management of Rangeland and Forestry Resources/Soil, Water, and Air planned program and created the separate planned program Climate Change. The actual amount of FTEs expended for Management of Rangeland and Forestry Resources/Soil, Water, and Air during 2011 were 12.3.

The planned program Management of Rangeland and Forestry/Soil, Water and Air is devoted to promoting the education of farmers and people related with agriculture through activities addressed to establish conservation practices to promote the protection of our forests, trees, and watersheds; increase appropriate fertilization practices, conserve water, and mitigate emissions of particles from agricultural practices to the air. We also emphasize on better soil management on the flood plains, the recharge of groundwater, and new alternatives to ensure compliance of air and water quality regulations.

PRAES, in cooperation with local government agencies and federal programs, developed guidance, training, and technical assistance to promote and develop projects for the conservation of our natural resources and reforestation. Twenty-two (22) community members, farmers, and students participated in the different workshops and trainings to learn the appropriate management practices.

As a result 61% of the people trained were impacted and adopted one or more of the recommended practices. Community groups, students and farmers around the island accepted the challenge and adopted practices on their farms, communities, and schools. Watersheds protection, recycling of paper and waste material, and preparation of compost were some of the practices adopted.

PRAES also promoted and helped to develop reforestation projects to enhance the natural environments around communities in joint efforts with the Department of Natural Resources and Environment (DNRA), PR Regulations and Permits Administration, Natural Resources Conservation Service and), non-government agencies, community, volunteers, and schools. The establishment of tree nurseries by the DNRA was part of the efforts to produce tree seedlings of native trees for reforestation projects. New environmental leaders were developed in our communities.

Seventy-three per cent (73%) of the landowners and community members trained adopted practices

on fire prevention in forests and rangelands. Property owners and communities joined forces to meet those challenges in protecting property and lives.

Improper use of agricultural practices harms air and water quality. The use of pesticides, an important part of modern agriculture, poses a potential threat to non-target organisms, including humans. Miscellaneous compounds such as fuels, solvents, paints, heavy metals and waste products may be sources of agricultural pollution. There are practical ways to ensure that risks to the environment are minimized without sacrificing agricultural and economic productivity. The use of herbicides and insecticides can be minimized through Integrated Pest Management.

PRAES specialists and agents used workshops, demonstration and on-site visits to encourage proper storage, mixing, and handling of pesticide to minimize risks to the environment. Thirty-one per cent (31%) of persons trained adopted recommended practices for air and water quality. Agricultural practices implemented help to prevent erosion, reduce movement of pesticide and runoff from agricultural lands.

PRAES also encouraged the use of BMPs and jointly with other local and federal agencies implemented workshops and demonstrations. PRAES helped to prepare farm development plans that minimize the impact of pollution across a range of farming activities in compliance with environmental regulations. Fifty-two per cent (52%) of the farmers trained comply with the soil, air and water regulations. Use and disposal of organic and inorganic fertilizers, water runoff and pesticide control, unpleasant odors from organic manures and wastes were some of the issues that farmers minimized with the adoption of management practices.

4. Climate Change

The planned program Climate Change was created during 2011, with a total of 8.45 FTE's expended (6.0% of the total 167.81 FTEs expended during 2011).

Puerto Rico is one of the most densely populated countries in the world and has a long history of ineffective land-use planning. Also, due to its geographical location Puerto Rico is constantly exposed to the effects of natural disasters (hurricanes) which negatively affect natural resources such as water and soil. These resources are at stake by their susceptibility to weather changes and by the ever increasing demand and pressure to satisfy the needs of a growing human population.

PRAES personnel need to be more diligent in providing the farmers and the community with information, technologies, and education on how to cope with climate change and ways to contribute to greenhouse gas (GHG) mitigation. They need to engage in the development of the farmers' leadership to allow them to be proactive (risk management practices) and actively involved in decision-making. This is of utmost importance, especially for the resource-scarce small farmers who contribute little to climate change and yet will be among the most affected. Most of our agricultural production comes from small-scale farms which are often family owned and operated.

As stated in the Plan of Work, the first year of the present cycle was going to be devoted to the development of a curricular guide on climate change, entitled "El cambio climático: impacto sobre la producción agrícola y prácticas de adaptación" (Climate Change: its impact on agricultural production and adaptation practices) in order to have an educational tool for the field personnel.

The second step is capacity building to our Extension personnel together with the State Department of Agriculture and other service agencies, geared to the implementation of practices, measures and resources that enable farmers to adapt, to mitigate and to minimize economic losses.

This effort needs to convey issues on land-use and the preservation of agricultural land, strategies such as collaborations, development of decision-making skills, and involvement in public policy to ensure the long-term success of the program.

One thousand and seventy (1,070) people received capacity development (workshops, seminars, conferences) on water quality, watershed protection, and maintenance and 204 received capacity development in agroforestry, soil erosion, and storm water runoff control.

Three hundred and ninety-six (396) community leaders/people participated in natural disasters and emergency management conferences.

5. Sustainable Energy

During FY 2011, the planned program Sustainable Energy was created from Engineering Biosystems, which was part of the Plant Systems and Animal Systems planned programs. The actual

amount of FTEs expended by this program during 2011 were 5.1

The decreases in oil availability, uncertainty in the cost of fuels and its implications in the economic wellbeing of our citizens, have triggered the urgency for energy independence and sustainability. Puerto Rico, having one of the highest costs of fuel in the United States and even though our tropical climate is favorable to the sustainable energy industry, not many projects have passed the planning phases. Our program seeks to increase existing knowledge of our clientele of the sustainable energy technologies, energy conservation, and opportunities of financing sustainable energy projects and their cost, and environmental benefits.

The local government has been partially successful at motivating people to invest in sustainable energy technologies like solar heaters, and offering tax incentives. A new program by the federal government, in which a \$200.00 economic incentive is offered to change to more efficient farm appliances, has just started. On the other hand, a recent effort to trade-in old vehicles for newer, more efficient ones by offering economic incentives was cited by the local press as being short of meeting expectancies.

Our experience with some of the most technically oriented clients in the Puerto Rico Agriculture Extension Service is that they have a desire to learn about technologies like biogas production, solar power, "green roofs" and net metering; but there is a very timid interest in making capital investments without big government incentives. The technologies are too complicated to be understood by the average citizen and they require high initial investments.

We offered over 30 workshops to farmers around the island on sustainable energy (PV) applied to greenhouse operation and/ or opened hydroponic system to minimize the cost of energy bills. We explained that the government has some incentives for farmers who change their electrical dependence from crude oil to sustainable energy production.

As a result of training and information dissemination on sustainable energy, 997 people participated in the workshops and meetings around the island. The participants were very enthusiastic and eager to learn about energy efficiency and sustainability.

With the training and support on sustainable energy of the agricultural agent, government incentives, and labor from the private sector some farmers began to change from fossil energy to sustainable energy consumption.

We have several hydroponic producers that changed their scene and went up 100% using (PV) sustainable energy. Other producers went from 40% to 60% using sustainable energy. Almost 95% of them changed their electrical dependence from oil because they received incentives from the government.

On outcome #2 we have a difference from the target mainly due to the fact that there is a time gap from the time that incentives are offered and when they are actually awarded. This time lag worsens with competing public priorities on an economically tight atmosphere. Tight government regulations, in which only Certified Electrical Engineers and electrical experts on solar or wind energy can design, make plans and establish those kinds of sustainable facilities limits the work of our specialists (Output # 3). Our agricultural agents can evaluate proposals for sustainable energy establishment and give recommendations to farmers with the advice of the engineers.

On outcome # 3 we have an error on the quantitative target which was supposed to be 50 not 500. We made the corrections in the 2012 plan of work. On this item we have a difference, due to the fact that this is the first year of this plan and carry out those projects will depend on government incentives and there were not clearly defined until recently.

6. Global Food Security and Hunger

The planned program Global Food Security and Hunger, which began in 2011, accounted for a total of 7.5 FTEs for that fiscal year.

Only 20% of the food and beverages consumed in Puerto Rico are produced on the Island (External Trade Statistics, 2008). Practically all the cereal, oil and fat, sugar, vegetables, fish and soup consumed are imported as are more than 3/4 of fruit, vegetables, and meat. Most imports are from the United States, but Puerto Rico receives food from more than 50 countries around the world. Local production consisted mainly of milk, eggs, plantain, and coffee.

Some vulnerabilities of Puerto Rico's food supply chains' are: low local agricultural production with continued loss of agricultural, a high dependence on imported food equivalent to more than 80% of our

food consumption, food importers and transport logistics are oligopolies, the food reserve is not clearly defined, the Island doesn't have a food security policy, and sea routes towards the island match the path of hurricanes in the Caribbean. Ensuring Puerto Rico's food security presupposes the elimination or reduction of these vulnerabilities. Although the Government is in charge of solving any crisis and emergency related to food, the private sector still has to develop innovative strategies to guarantee food security.

PRAES helps farmers, agro entrepreneurs, and the public in general to understand the threats to our food security and to identify strategies to attend these threats. We can coordinate the exchange of information between the government, academy, and private sectors to define and adopt strategies. To accomplish this goal Extension has been using different strategies such as curriculum development, collaboration with the public and private sectors, and the dissemination of information.

Twelve thousand seven hundred and sixty-one (12,761) individuals were oriented about global food security during 2011.

Curriculum guides for food security aimed at farmers and housewives were prepared and all agricultural county agents and home economists were trained on these. We presented lectures, recorded TV and radio programs, and wrote press articles on this subject.

All community sectors were impacted and, as a result, we helped to develop 1,246 home gardens.

Global Food Security and Hunger being an international issue that was present during the year, gave us the opportunity to develop a curriculum guide (Outcome 4) that helped to introduce the concept in the community. All of the College of Agricultural Sciences (besides the PRAES personnel, which included the planned program as part of their Plan of Work) and the mass media (three TV programs, 21 radio programs, and our web page <http://academic.uprm.edu/mcomas/>) were involved in this initiative, which gave us much visibility and helped us surpass our goals. We were also sponsored by local newspapers.

FAMILY AND CONSUMER SCIENCES

7. Family Well-being

With Food Safety as a separate planned program, we created the Family Well-being Program, which includes Families and Children, Consumer Education and Individual and Family Resources plus Human Health and Well-being. The actual amount of FTs expended for Family Well-being planned program during 2011 were 20.9, an increase from 19.4 FTEs in 2010.

The Family Well-being planned program targets families, children, youth, elderly people, new couples, and employees of the public and private sectors. Its goal is to develop educational programs to empower families to nurture, support, and guide their members throughout their lives and motivate them to improve their quality of life and well-being in addition to increasing their financial well-being through knowledge, skills and self-confidence.

To reach this goal, the Family Life and Consumer Education specialists develop through workshops, curriculum, radio programs, bulletins, information centers, and trainings in successful parenting character traits, values, family strengths and aging aspects, and through competencies such as: how consumer behavior influences decision-making, budgeting, debt reduction, credit wise and savings.

Family violence statistics have an increasing tendency. Complex new family structures limit parents in providing positive role models that promote positive values and changes that improve family life.

To deal with this problem during three months PRAES offered courses on Successful Parenting, Family Crisis, and Family Strengths, parents, single female and male parents, grandparents raising grandchildren, and young mothers, as well as church, school and community members and local government representatives participated.

A total 1,717 persons reported improved parenting skills; 150 community members including children, benefitted. Success achievement indicators were a consistent and constant active participation, open communication, and participation in community activities.

A course on "Revaluation of the aging adult" was offered to increase participants' knowledge of the aging process and develop life skills to face loss, loneliness, and depression. Of 1,426 participants in the course, 170 were elderly persons. A total of 366 volunteers/persons gained knowledge in aging aspects. The participants achieved positive attitudinal change towards aging, self-esteem, loss,

loneliness, and other situations related to the aging process. They expressed decreased emotional loneliness and an improvement in relations with family members and friends. Extension educators will continue to offer this course to more elderlies.

A total of 14 courses were offered by home economists of the Family Sciences and Consumer Program to mothers heads of households, low-income families, and disadvantaged individuals displaced due to disabilities, unemployment, and other personal and economic life changing situations. The main course was "Facing difficult times". Other topics were consumer rights and protection, savings planning, and family budget.

Two hundred and sixty (260) families were benefited. Many of the participants were referred by insular government agencies. Seventy-seven percent (77%) of the beneficiaries increased their knowledge and developed skills in budget preparation, money use, financial planning, identification and establishment of priorities according to their needs and resources. They also developed positive attitudes in controlling unnecessary expenses.

8. Food Safety

During FY 2011 we separated Food Safety from the planned program Human Health and Well-being Food Safety Program. Human Health and Well-being became part of the newly created Family Well-being planned program, which includes Families and Children, Consumer Education and Individual and Family Resources plus Human Health and Well-being. The actual amount of FTs expended for Food Safety were 7.4 (4.40% of the total 167.81FTE's expended during FY 2011).

The goal of the Food Safety component is "To improve food safety through the control, reduction or elimination of contamination risks". Its main components are the "Fight BAC!" campaign, for consumers; the Food Safety Certificate course, for persons in charge of food establishments; and Train-the-trainers, for university personnel and professionals from other government agencies and organizations.

PRAES' offers persons in charge of retail food establishments the Food Safety Certification Course (FSCC) and offers formal education to professionals that teach or enforce compliance regulations.

PRAES teaching field personnel and volunteers selected a minimum of four lessons out of 10 available for Fight BAC! based on the consumers' needs. We included lessons on how to properly handle food during emergencies and a topic on food security in which we teach consumers on how to always maintain an emergency food supply and how to keep it safe.

Ninety per cent (90%) of the consumers completing the Fight BAC course adopted at least one safe handling practice; 30% used a food thermometer to verify cooking temperatures; 100% washed their hands; 47% kept food for two hours or less in the Danger Zone; and 92% separated food to avoid cross contamination.

Persons in charge of food establishments were offered the Food Safety courses, which consists of 13 lessons which include all the knowledge areas that a person in charge of a Food Establishment must have. During the course trained professionals emphasize on safe food handling in order to prevent foodborne illnesses. Health Inspectors participated in each course. Of 4002 participants completing the Course, 97% approved the certification exam.

Seventy per cent (70%) of the people completing the FSC adopted at least three or more safe food handling practices; 57% planned on having a written food temperature register; 54% had food thermometers and were measuring cooking temperatures; 66% have separate cutting boards; 65% used utensils or disposable gloves when handling ready-to-eat food; 74% washed their hands; and 68% used a safe method for thawing frozen food.

9. Childhood Obesity

The planned program Childhood Obesity began in 2011. The total amount of FTEs expended were 8.0 (4.77% of the total 167.81 FTEs expended during FY 2011).

The Planned Program Childhood Obesity pretends to address obesity in children as a major public health problem, working with the following three areas of interest: nutrition knowledge, physical activity, and public policy. These areas promote a holistic view of the situation. Our focuses are the changes that influence people's consumption and activity level.

The Program allows the inclusion of other agencies as alliances, coordination or agreements. These collaborations help avoid duplicate efforts, the best use of resources and to share the achievements. It

also allows us to establish agreements to treat this population with a tailored cultural educational model and determine the accomplishment of 2020 Healthy People goals. Although, Healthy People 2020 is currently under development, we use it as a standard because it reflects assessments of major determinants of health and wellness, changing public health priorities, and emerging issues related to USA health preparedness and prevention.

Childhood obesity is a major public health problem. Puerto Rico's childhood obesity rate is 22%. Decreasing the prevalence of childhood obesity has become a major initiative in Puerto Rico Extension.

Seven hundred and fifty-one (751) youngsters participated in educational courses that integrated nutrition and physical activity lessons. Of the total number of participants that completed the courses, 57% decreased their consumption of sodas, 68% increased their consumption of fruits and vegetables and 84% increased their level of physical activity. Therefore, Extension courses are promoting behavior changes that can decrease risk levels for childhood obesity.

FOUR-H AND YOUTH DEVELOPMENT

10. Strengthening Youth Life Skills, Leadership and their Community

Although this planned program has the highest percentage (18.30%) of the total FTEs 167.81 accounted for during FY 2011, it had a reduction compared to 2010 which accounted for 21.56% of a total of 175.47 FTEs. This was mainly due to the retirement of personnel which was not replaced due to budget reduction and the redistribution of FTEs to cover the new planned programs. The actual amount of FTEs expended for this planned program during 2011 was 30.7.

The Puerto Rico 4-H and Youth Development Program has Youth Development as a mayor emphasis area for its long-range educational program. It is designed to provide youth with positive opportunities to learn and interact with peers and adults, provide leadership development, and focuses on the enhancement of life skills through research-based educational programs focusing on Healthy Lifestyles; Science, Engineering and Technology; Citizenship and Leadership. Different activities and methods such as: camps, competitions, meetings, demonstrations, and workshops are used, but, especially, the development of projects as a strategic learning tool. In-service learning experiences are promoted to give youngsters the opportunity to reflect on and take action concerning issues that impact them. Through the project the youngsters acquire and develop life skills in order to identify the most important issues, within a real world situation, through critical thinking, generate emotional consequences, which challenge values and ideas, and support social, emotional and cognitive learning and development. The development of life skills for the prevention of negative high risk conduct are emphasized in this program.

During 2011, 4,243 children/ youth participated in life skills and subject matter educational programs designed to teach basic life skills.

The Four-H Clubs and Youth Program established the production of nutritive food in home and community ecological vegetable gardens as an educational strategy as a means of integrating the Food Security emphasis area. PRAES personal developed short courses and workshops about the establishment, maintenance, production and nutritional value of different crops that are adaptable to small spaces in the rural and urban areas. Thinking and management skills were promoted through this subject matter.

One thousand five hundred and three (1,503) youth/4H members established vegetable gardens in their schools, homes and/or communities. This youth/4-H members demonstrated the following skills: 399 increased decision making skills, 24 acquired life skills in problem solving, 36 developed skills in planning organization, and 45 in service learning, according to the Targeting Life Skills Model.

COMMUNITY RESOURCE DEVELOPMENT

11. Community Resources Development by Means of Fostering Sustainable Communities

The actual amount of FTE expended for this planned program during 2011 was 26.9, a reduction from 31.00 during 2010. Part of this reduction was due to redistribution of FTEs to cover the five new

priority areas and a reduction in personnel due to retirement.

The Community Resources Planning and Development Program focuses in the delineation of an effective Community Economic Development and Self-management program that addresses Puerto Rico's most pressing social issues. Accordingly, our plan of work focuses on holistic educational strategies that promote self-employment and community oriented initiatives as a means to foster sustainability, self-reliance and empowerment. A participant oriented methodology is employed (Participatory Action Research), in which participants take an active role in defining problems and aspirations, seeking possible solutions, implementing strategies, and evaluating the results (Foote, 1991; Greenwood, 1998; Macpherson (et.al.), 2005).

The empowerment and self-management of the communities requires information, guidance, education and civic engagement. Strong communities develop programs, anchored in research, education, and in teaching their partners. That is why we have adopted the Participative Action Research methodology as our principal approach to empowering and constructing stronger communities.

During 2011, 74% of the participants trained in community-based business have applied one or more of the recommended practices in the process of developing a community-based business. Compared to 2010, this represents a growth of 237% of the participants that put in place entrepreneurial initiatives and skills such as: human resources analyses, viability studies, evaluation of the competition, marketing, permits and incorporation compliance requirements. Economic ventures and business proposals are steadily flourishing throughout the Agricultural Extension Service regions thanks to the CRD's "Community Entrepreneurial Toolbox" (36 in 2011 compared to 32 in 2010).

Stakeholders have been widely trained on the "Community Entrepreneurial Toolbox" workshop series together with other marketable skills in the areas of artisanship, craftsmanship, tailoring, children and elderly services and agricultural production.

In 2011 we experienced an increase of 387%, compared to 2010, in the number of community-based business being established and an output of 232% over the expected target. CRD's strategy of providing entrepreneurial training to those stakeholders who benefit from PRAES' other courses which provide marketable skills in family science and agriculture has resulted effective. Most of these 58 community-based and micro-businesses being created are in areas of agricultural production, food confection, and services closely related to the Agriculture and Natural Resources, as well as Family Sciences curricula. This has resulted in the creation of 131 new jobs and has provided some (or additional income) to 481 participants.

The implantation of a new curriculum in Emergency Management and the phase-out of the old curriculum have resulted in an unexpected gap in outcome #5. Since Puerto Rico's CRD program has just introduced a new curriculum, it is expected that during 2012 we will see the accomplishments of the intensive educational campaign that was carried out in 2011. The extended and still growing economic crisis in Puerto Rico, with a labor force participation rate of just 42% of the able workers, keeps providing AES in Puerto Rico with both new challenges and new opportunities for human and community development.

We conducted the "First Community Leaders Encounter" in collaboration with USDA Rural Development where we conducted a Nominal Group evaluation. The participants were asked to provide areas of utmost preoccupation and interest for their communities that will allow CRD and RD to direct their collaboration in community development. Sixty-eight (68) community leaders participated in six groups and concluded that their main concerns are: 1) Problems with inadequate infrastructure (mostly water community systems, electric power infrastructure and maintenance, and affordable and adequate housing); 2) Social and economic inequality (lack of economic, educational opportunities, as well as equal protection by the state; 3) Government apathy, or as most participants vividly pointed out: "sloppiness" (mostly lack of governmental compliance with its own environmental regulations, and lack of government's compliance in providing vulnerable communities with the rights and services it provides to other groups in society).

EVALUATION OF MULTI JOINT ACTIVITIES

1) How will the planned program address the critical issues of strategic importance,

including those identified by the stakeholders?

Critical issues of strategic importance are being addressed through the five national initiatives and have been integrated across the four base programs. The Family and Consumer Sciences program has as its major priority the Childhood Obesity Planned Program. Educational material has been updated to include the new My Plate based on the 2010 Dietary Guidelines to improve family food habits. Other state critical issues identified by our stakeholders continue to be economic issues and child maltreatment. FCS program through its Family Well-being Planned Program helps individuals, families and communities to make better management of their income in order to make wiser decisions and better use of their resources. In addition, educational campaigns at the state level have been developed to prevent child maltreatment.

In the agricultural sector, PRAES conducts continuous commodities meetings in collaboration with the Agricultural Experimental Station to discuss issues of critical importance for farmers and define strategies to address these issues. Extension specialists assume leadership roles in these meetings, therefore becoming major contacts between PRAES and the Experiment Stations.

Besides part of every local Advisory Committee during FY 2011, 4-Hers participate in different activities, which provide them with opportunities to share their views on the critical issues affecting our youngsters. These activities include the Annual State Conference, summer camps, and local meetings. Most of the issues identified by our 4-Hers coincide with local and state initiatives, consequently the 4-H program is addressing with major emphasis issues of childhood obesity through two new curriculums and Food Security through the establishment of School and Community Gardens.

The Four-H program area's major State initiatives emphasize consumer education and character values. All of the subject matter areas also emphasize the development of life skills. The Programs is also attending prevention of alcohol and drug consumption among youngsters, in addition to a collaborative project between PRAES and ASSMCA.

The Community Resources Development base program conducted a nationwide community leaders' encounter to identify major critical issues affecting their communities. CRD specialists and extension administrators, in collaboration with USDA Rural Development, will develop an action plan to address these issues.

In order to address the economic crisis (another major issue affecting our communities), the Community Resources Development by Means of Fostering Sustainable Communities planned program has increased the educational opportunities in this area with the continuous collaboration of USDA Rural Development so that the communities can submit proposals to advance their entrepreneurial objectives.

2) How will the planned programs address the needs of under-served and under-represented population of the states?

The Family and Consumer Sciences planned programs' priority targeted groups include low-income families, adolescent mothers, elderly people, at risk populations, women heads of households, and individuals with physical, social and economic disadvantages. The under-served audience of incarcerated women and men are also reached through the project "Parents on wheels" and "Food Safety" courses.

In the agriculture sector, the project "Small Farmer Outreach Training and Technical Assistance Program" targets small farmers; and the Women in Agriculture initiative address under-represented women farmers. Collaborative agreements with the PR Department of Agriculture are directed towards offering technical assistance and counseling to under-represented coffee, fruit, and starchy vegetable crops producers.

In the 4-H program, emphasis has continued to integrate kids with special needs to the diverse educational contests offered by the Youth and 4-H planned program, as well as to special projects that promote physical activity and sports. Extension Agents will continue collaborating with the Department of Education's "Independent Life Project" where agents offer health related educational courses to this population.

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

Every PRAES planned program describe the expected outcome and impacts through outcome indicators reported in the Electronic Reporting System that collects data throughout the state via internet. Impacts are collected through local and state success stories and reported in Impact Statements

in the Federal Annual Report. The majority of the planned programs report at least one impact statement which focuses on outcomes or changes in action and conditions.

The Family Well-being planned program focuses on changes in knowledge and acquisition of skills, while the Food Safety planned program emphasizes the adoption of recommended practices.

The Strengthening Youth Life Skills, Leadership and their Communityplanned program presented an increase in life skills for youth participating in the 4-H clubs that will equip them with the necessary skills to avoid risky behaviors.

The Community Resources Development by Means of Fostering Sustainable Communitiesplanned program had an increase in outcome measures such as the number of community-based businesses established which are demonstrating progress towards achieving a long-term impact of improving the communities' economy and well-being in these times of economic crisis.

The outcomes of the agricultural planned program focused on changes in action showing increases in adoption of recommended practices and improvement in the quality of the products resulting in increased production.

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

The planned programs in PRAES continued to improve their efficiency through collaborative multi-institutional efforts with major agencies and institutions that work with similar audiences such as the PR Department of Agriculture, Farm Service, Rural Development, NRCS, Commodity Farmers Association, Family's Department and Department of Education. Specifically PRAES united efforts with the Agricultural Experimental Station where extension agents and researchers worked together in the organization of commodity meetings, where critical issues were discussed with farmers and other audience related to agriculture. Various projects to address these issues are taking place in collaboration with AES. New educational material will be developed according to the farmers' needs, fairs and mass media communication will be organized to promote the planned programs' activities including an electronic web page. The 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 updates 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. Special emphasis has been placed in the five planned programs that address the national initiatives.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	173.3	0.0	0.0	0.0
Actual	167.8	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 University Panel

2. Brief Explanation

The Merit Review process was conducted through four committees, which represent the four major program areas: Agriculture, Marketing, and Natural Resources; Family and Consumer Sciences; Four-Hand 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. The program area leaders, together with other Extension staff, defined educational strategies to address the recommendations, which were incorporated to the final POW, as needed. During the final committee meeting for 2010, the program area leaders presented an oral and written report that identified how the 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 of local agencies that work with similar audiences as Extension. The county agents used regular mail to invite potential members to participate in the committees. In the letters they 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 their target audience, based on their experience and participation in Extension programs, and were invited to join the committee by regular mail.

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)

Brief explanation.

The committees met twice during the year to discuss critical local issues and 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. During FY 2010-2011 additional information was collected from key community leaders through a needs assessment process conducted at the state level by the Community Resource Development program area.

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 was reported to the state level. This data was 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 Committees, when farmers and other agricultural representatives identified issues that required or suggested 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.

Brief Explanation of what you learned from your Stakeholders

During this fiscal year, the issues most mentioned by the stakeholders within the Family and Consumer Sciences base program were related to the development of social values, nutrition and childhood obesity, and finance management. Within the Youth and 4-H base program, young stakeholders expressed to be interested in the development of leadership skills and community service. They were also interested in the development of school and home gardens as well as issues related with the environment. In the Community Resource Development program area community leaders also understood that Extension courses on leadership development are critical for the communities' development. This, together with economic development and community empowerment, are critical issues identified by community leaders. In the area of Agriculture, Management and Natural Resources the major issues identified by the stakeholders included those related to natural resources and environment conservation as well as continue strengthening agricultural production and marketing strategies.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
6314827	0	0	0

2. Totaled Actual dollars from Planned Programs Inputs				
Extension			Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	6314827	0	0	0
Actual Matching	3157413	0	0	0
Actual All Other	0	0	0	0
Total Actual Expended	9472240	0	0	0

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

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Plant System
2	Animal Systems
3	Management of Rangeland and Forestry Resources/Soil, Water, and Air
4	Family Well-being
5	Food Safety
6	Strengthening Youth Life Skills, Leadership and their Community
7	Community Resources Development by Means of Fostering Sustainable Communities
8	Climate Change
9	Sustainable Energy
10	Global Food Security and Hunger
11	Childhood Obesity

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Plant System

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)	9%			
205	Plant Management Systems	8%			
211	Insects, Mites, and Other Arthropods Affecting Plants	12%			
212	Pathogens and Nematodes Affecting Plants	9%			
216	Integrated Pest Management Systems	13%			
401	Structures, Facilities, and General Purpose Farm Supplies	7%			
402	Engineering Systems and Equipment	5%			
403	Waste Disposal, Recycling, and Reuse	7%			
405	Drainage and Irrigation Systems and Facilities	8%			
601	Economics of Agricultural Production and Farm Management	5%			
602	Business Management, Finance, and Taxation	5%			
604	Marketing and Distribution Practices	7%			
610	Domestic Policy Analysis	5%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	23.5	0.0	0.0	0.0
Actual Paid Professional	26.6	0.0	0.0	0.0
Actual Volunteer	0.0	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
1001732	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
500866	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 production trainings.
- Conducted postharvest management training
- Conducted Packinghouse management and GAPs
- Conducted workshops
- Visits and guidance to farmers
- Conducted farmers meetings
- Collaborated with local government agencies
- Prepared IPM programs
- Prepared irrigation systems plans
- Prepared cultivation practices plan
- Prepared pest and diseases control plan
- Prepared educational material
- Distributed publications

2. Brief description of the target audience

Farmers, packinghouse manager, government professionals, county agents, agricultural entrepreneurs, pesticide applicators, homeowners, landscapers, and professionals from the private sector.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	66067	0	0	0

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

Patent Applications Submitted

Year: 2011
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	3	0	3

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of persons trained on plant management, products quality, value-added, pesticide use, IPM, pesticide application, and commercial pesticide application.

Year	Actual
2011	8183

Output #2

Output Measure

- Number of workshops and meetings offered.

Year	Actual
2011	325

Output #3

Output Measure

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

Year	Actual
2011	336

Output #4

Output Measure

- Number of waste management systems designed.

Year	Actual
2011	294

Output #5

Output Measure

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

Year	Actual
2011	11

Output #6

Output Measure

- Number of demonstration facilities established.

Year	Actual
2011	3

Output #7

Output Measure

- Number of trainings, courses and seminars offered.

Year	Actual
2011	336

Output #8

Output Measure

- Number of farmers and agricultural entrepreneurs trained.

Year	Actual
2011	1626

Output #9

Output Measure

- Number of clients that participated in workshops on structures, waste management systems, and drainage and irrigation systems.

Year	Actual
2011	503

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.
6	Number of persons that adopted one or more practices after of integrated pest management program.
7	Number of persons that reduced pesticide use after the establishment of an integrated pest management plan.
8	Number of farmers that acquired knowledge after completing a training program in pesticide application.
9	Number of clients that increased their knowledge about improvements to increase the efficiency of structures (new and existing) and compliance with regulations.
10	Number of clients that increased their knowledge about appropriate systems for waste management in their projects.
11	Number of clients that increased their knowledge about drainage or irrigation facilities.
12	Number of clients that adopted one or more of the recommended practices to increase the efficiency of their structures and comply with all permits.
13	Number of clients that adopted one or more practices to improve their drainage or irrigation facilities.
14	Number of farmers that improved their structures (new and existing) and/or comply with permits.
15	Number of waste management systems improved (new or existing).
16	Number of drainage or irrigation facilities improved.
17	Number of farmers that increased their production as a result of improving their structures.

18	Number of farmers that increased their production as a result of improving their waste management systems.
19	Number of farmers that increased their production as a result of improving their drainage or irrigation facilities.
20	Number of farmers and agricultural entrepreneurs that adopted one or more economic practices.
21	Number of farmers and agricultural entrepreneurs that utilize economic tools to make effective economic decisions to improve their business.
22	Number of persons that adopted one or more techniques after completing an integrated pest management program.

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	Actual
2011	1604

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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 Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	700

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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	Actual
2011	1173

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Most of the Island's citrus farms are small or medium sized and owner operated. The main crop production problems the farmers confront are poor product quality, deficient crop cultivation practices, difficulty in crop cultivation and management when they are located in mountainous areas, low soil fertility and erosion, and greening ("Candidatus liberibacter"), a bacteria which threatens citrus production, detected in Puerto Rico in 2009.

What has been done

The UPRAES managed an integrated citrus management program through the Quality and High Performance Units (UCAR, for its initials in Spanish) project, in cooperation with the Department of Agriculture. One of its goals was to increase fruit quality on citrus crops. One hundred (100) farmers were trained through educational materials, conferences and on-site demonstration methods in pruning, fertilization and integrated management practices, including weed management, citrus greening management, sanitation, and timely use of pesticides. An evaluation was made with 30 farmers (15 regular farmers and 15 farmers under UCAR) to see how the program implemented would increase fruit quality on citrus.

Results

After one year, 30 farmers increased fruit quality on citrus. Production of marketable fruits per acre of the farmers in the UCAR project in the municipalities of Lares and Utuado was 83%, compared to 62% of the regular farmers (not in the UCAR project). There was an increase of 21% in marketable fruits per acre or an increase of \$1,470 per acre.

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	Actual
2011	320

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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	Actual
2011	736

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

Outcome #6

1. Outcome Measures

Number of persons that adopted one or more practices after of integrated pest management program.

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

Number of persons that reduced pesticide use after the establishment of an integrated pest management plan.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	777

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 #8

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	Actual
2011	1549

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

Outcome #9

1. Outcome Measures

Number of clients that increased their knowledge about improvements to increase the efficiency of 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	Actual
2011	328

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
402	Engineering Systems and Equipment

Outcome #10

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	Actual
2011	286

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 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	Actual
2011	119

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 #12

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	Actual
2011	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
401	Structures, Facilities, and General Purpose Farm Supplies

Outcome #13

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	Actual
2011	14

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 #14

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	53

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 #15

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	Actual
2011	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
403	Waste Disposal, Recycling, and Reuse

Outcome #16

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	Actual
2011	9

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 #17

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	Actual
2011	16

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 #18

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	Actual
2011	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**
403 Waste Disposal, Recycling, and Reuse

Outcome #19

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	Actual
2011	8

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 #20

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	Actual
2011	816

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

Outcome #21

1. Outcome Measures

Number of farmers and agricultural entrepreneurs that utilize economic tools to make 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	Actual
2011	710

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

Outcome #22

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	Actual
2011	945

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

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.)

Brief Explanation

Program activities were affected by factors such as weather conditions (2011 was the second rainiest year in recorded history with 87.82 inches of rain (National Weather Service of Puerto Rico). Farmers were severely affected by atmospheric events, especially heavy rains, which affected crop production, caused floods, or mud slides, which increased soil erosion and sedimentation of rivers and watersheds. Although no hurricanes affected the island directly, the floods and winds they brought did great damage. Especially Hurricane Irene, which caused damages between \$70 million and \$250 million to our agriculture (mainly in the eastern and south eastern parts of the island) due to flooding, landslides, and strong winds.

An unstable economy, appropriation changes, and competing programmatic challenges and public priorities, as well as staff changes affected the continuity of work and projected outcomes. Farmers changed priorities and postponed projects.

There was also a reduced clientele response to workshops due to economic situation. Developing and delivering quality evaluation instruments so we could document and keep track of changes in the clientele, was a challenge.

In spite of all of these negative effects to our agriculture, we were able to surpass our goals in Objectives 3, 5 and 7 due to intensive training in citrus and plant management and integrated pest management (including on-site demonstrations of methods in pruning, fertilization and integrated management practices, including weed management, citrus greening management, sanitation, and timely use of pesticides). The adoption of the recommended practices by farmers that realized the importance of using better management practices to improve their crops and economic yield, was also a contributing factor.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

No evaluation was conducted during FY 2011. An evaluation process is in place for FY 2013.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Animal Systems

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	5%			
302	Nutrient Utilization in Animals	5%			
303	Genetic Improvement of Animals	2%			
305	Animal Physiological Processes	2%			
306	Environmental Stress in Animals	5%			
307	Animal Management Systems	10%			
308	Improved Animal Products (Before Harvest)	5%			
311	Animal Diseases	10%			
312	External Parasites and Pests of Animals	5%			
313	Internal Parasites in Animals	5%			
315	Animal Welfare/Well-Being and Protection	5%			
401	Structures, Facilities, and General Purpose Farm Supplies	3%			
402	Engineering Systems and Equipment	3%			
403	Waste Disposal, Recycling, and Reuse	12%			
405	Drainage and Irrigation Systems and Facilities	4%			
601	Economics of Agricultural Production and Farm Management	7%			
602	Business Management, Finance, and Taxation	5%			
604	Marketing and Distribution Practices	5%			
610	Domestic Policy Analysis	2%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890

Plan	19.7	0.0	0.0	0.0
Actual Paid Professional	13.9	0.0	0.0	0.0
Actual Volunteer	0.0	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
521939	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
260970	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, trainings and workshops
- Farm visits
- Educational material (publications, newsletters, CDs)
- Offered counseling and orientation
- Worked in collaboration with the communications media
- Wrote and submitted extension and research proposals
- Established 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)
 - Established collaborations with our partners in the University of Puerto Rico and other educational institutions
 - Developed educational material consisting of model plans and educational material (publications, newsletters, CDs)
 - Collaborated in the construction of demonstration facilities

2. Brief description of the target audience

Farmers, agricultural entrepreneurs, PRAES professionals, government personnel, community leaders, and professionals from the private sector.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	10207	1928	1908	186

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	2	0	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of persons trained in control and prevention of diseases in animals, bio-security progran, control and prevention of internal and external parasites, animal welfare and protection, control of environmental stress on animals, animal productin, and animal products.

Year	Actual
2011	3057

Output #2

Output Measure

- Number of collaborations established.

Year	Actual
2011	176

Output #3

Output Measure

- Number of workshops and meetings offered.

Year	Actual
2011	155

Output #4

Output Measure

- Number of clients that participated in the workshop on structures, waste management systems and drainage or irrigation systems.

Year	Actual
2011	386

Output #5

Output Measure

- Number of waste management systems designed.

Year	Actual
2011	65

Output #6

Output Measure

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

Year	Actual
2011	3

Output #7

Output Measure

- Number of demonstration facilities established.

Year	Actual
2011	3

Output #8

Output Measure

- Number of trainings, courses and seminars offered.

Year	Actual
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2011

73

Output #9

Output Measure

- Number of farmers and agricultural entrepreneurs trained.

Year

Actual

2011

508

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.
6	Number of peresons that improved efficiency of animal production.
7	Number of persons that adopted one or more practices to control heat stress.
8	Number of persons that improved the quality of their product
9	Number of perosns that improved the animal production practices.
10	Number of persons that improved the nutrient utilization practices in animals.
11	Number of persons that increased animal production after adopting the recommended practices.
12	Number of persons that increased their knowledge about appropriate systems for waste management in their projects.
13	Number of persons that adopted one or more of the recommended practices to increase the efficiency of their structures and comply with all permits.
14	Number of clients that adopted one or more practices to improve their drainage or irrigation facilities.
15	Number of farmeres that improved their structures (new or existing) and comply with permits.
16	Number of waste management systems improved (new or existing).
17	Number of drainage or irrigation facilities improved.

18	Number of farmers that increased their production as a result of improving their structures.
19	Number of farmers that increased their production as a result of improving their waste management.
20	Number of farmers that increased their production as a result of improving their drainage or irrigation facilities.
21	Number of farmers and agricultural entrepreneurs that adopted one or more economic practices.
22	Number of farmers and agricultural entrepreneurs that use economic tools to make effective economic decisions to improve their business.

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	Actual
2011	421

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
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	Actual
2011	328

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 #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	Actual
2011	45

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	Actual
2011	287

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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	Actual
2011	425

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #6

1. Outcome Measures

Number of peresons that improved efficiency of animal production.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	204

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 #7

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	Actual
2011	344

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 #8

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	Actual
2011	479

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 #9

1. Outcome Measures

Number of persons that improved the animal production practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	273

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 #10

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	Actual
2011	346

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 #11

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 Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	176

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

To have a proper production of farm animals a series of steps should be followed. Among the most common recommended production practices is keeping operational records, which is the tool for making the best production decisions. It allows maintaining the best productive animals and culling the least productive to increase farm income and reduce operational costs.

What has been done

The cost of goods is increasing constantly, and they have to be used more efficiently. Puerto Rico Extension personnel emphasize the advantage of maintaining a more efficient operation. The use of animals of greater genetic traits, the control and prevention of diseases, the establishment of a bio-security program, and the improvement of facilities or creation of new ones to meet animal confinement regulations are among the recommended production practices to farmers.

Results

One hundred and seventy six (176) or 117% of the persons oriented increased animal production after adopting recommended practices.

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 #12

1. Outcome Measures

Number of persons 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	Actual
2011	286

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 #13

1. Outcome Measures

Number of persons 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	Actual
2011	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
401	Structures, Facilities, and General Purpose Farm Supplies

Outcome #14

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	Actual
2011	18

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 #15

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	31

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 #16

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	Actual
2011	48

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 #17

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	Actual
2011	13

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 #18

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	Actual
2011	13

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 #19

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	18

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 #20

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	Actual
2011	9

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 #21

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	Actual
2011	181

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Due to the economical situation, the market had to adapt to consumer needs. The farmers have been efficient in producing quality products without increasing the price to attract consumers to have them accept their product.

What has been done

PRAES personnel have been emphasizing the importance of keeping production costs as low as possible. The critical use of record keeping in any agricultural enterprise is the key factor to track their farm efficiency. It gives farmers an advantage to produce goods with a minimum cost. The availability of tools such as computers makes the records keeping process easier to follow and more effective.

Results

One hundred and eighty-one (181) or a total of 181% farmers and agricultural entrepreneurs adopted one or more recommendations in economic practices.

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 #22

1. Outcome Measures

Number of farmers and agricultural entrepreneurs that use economic tools to make 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	Actual
2011	68

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

- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Other (Focus prog. other agencies)

Brief Explanation

Although we had a decrease in FTE's from 22.6 in 2010 to 13.87 in 2011 (the planned FTE's were 19.7) due to retirement of personnel and budget reductions, our joint collaborations with other agencies such as Department of Agriculture through Dairy and Beef Cattle programs and communications media, and an increase in the amount of educational material distributed, workshops, trainings, and seminars allowed us to reach more farmers and general public (Output 1, 2., 3). We also had to split this planned program up by taking out Engineering Biosystems to create the new planned program Sustainable Energy, causing an additional reduction in FTE's. By focusing on recordkeeping to monitor farm animal production and to improve production practices, we were able to increase the number of persons adopting disease control and prevention practices, animal welfare and protection practices, practices for the control of parasites, reducing the number of diseased animals on their farm and improving product quality (Outcomes 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 21).

V(I). Planned Program (Evaluation Studies)

Evaluation Results

An evaluation plan has been developed for fiscal year 2013.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Management of Rangeland and Forestry Resources/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	5%			
102	Soil, Plant, Water, Nutrient Relationships	20%			
121	Management of Range Resources	25%			
122	Management and Control of Forest and Range Fires	5%			
123	Management and Sustainability of Forest Resources	15%			
124	Urban Forestry	20%			
133	Pollution Prevention and Mitigation	5%			
141	Air Resource Protection and Management	5%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	6.0	0.0	0.0	0.0
Actual Paid Professional	12.3	0.0	0.0	0.0
Actual Volunteer	0.0	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
463611	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
231806	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

- Collaborated with government agencies (DNRA, USDA-NRCS and others).
- Collaborated with our partners in the University of Puerto Rico and other educational institutions.
- Conducted workshops, short courses and trainings on practices, laws, and regulations related to range management, urban forestry, soil, water, and air.
- On-site farm visits and field trips to demonstration projects.
- Offered advice when clientele visited the office.
- Participated in radio programs to promote urban forestry, soil, water, and air regulations and conservation.

2. Brief description of the target audience

Farmers (includes small family farms, large scale farm business operation), farm workers, Extension professionals, professional government personnel, community residents, volunteers, and youth 13 18 years old.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	2	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of farmers trained in range management.
Not reporting on this Output for this Annual Report

Output #2

Output Measure

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

Year	Actual
2011	160

Output #3

Output Measure

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

Year	Actual
2011	37

Output #4

Output Measure

- Number of persons trained on pollution prevention and mitigation of natural resources.
Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Number of agency collaborations established.

Year	Actual
2011	74

Output #6

Output Measure

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

Year	Actual
2011	22

Output #7

Output Measure

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

Year	Actual
2011	13

Output #8

Output Measure

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

Year	Actual
2011	175

Output #9

Output Measure

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

Year	Actual
2011	871

Output #10

Output Measure

- Number of farmers trained on soil fertility.
Not reporting on this Output for this Annual Report

Output #11

Output Measure

- Number of farmers trained on soil conservation practices
Not reporting on this Output for this Annual Report

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.
8	Number of farmers that adopted the recommended practices for air and water quality.
9	Number of farmers that comply with the soil, air, and water regulations.
10	Number of farmers that adopted the fertilization practices.
11	Number of farmers that adopted one or more soil conservation practices.

Outcome #1

1. Outcome Measures

Number of farmers that improved their pastures.

Not Reporting on this Outcome Measure

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	Actual
2011	91

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Agriculture and the growth of towns and cities have contributed to the deforestation of our forested areas. As a result, the erosion of our soils and sedimentation of our waterways have increased. Farmers and citizens concerned about these problems have developed several projects to control soil loss and flooding, which affect our agriculture and our lives.

What has been done

The Puerto Rico Agriculture Extension Service in cooperation with local government agencies and federal programs, has developed guidance, training, and technical assistance to promote and develop projects for the conservation of our natural resources and reforestation. Community members, farmers, and students participated in different workshops and trainings to learn the appropriate management practices to conserve our natural resources and forests as a way to control soil erosion and deforestation and preserve of our land.

Results

Sixty-one per cent (61%) of the people trained were impacted and adopted one or more of the recommended practices. Community groups, students and farmers around the island accepted the challenge and adopted practices on their farms, communities, and schools. Watersheds

protection, recycling of paper and waste material, and preparation of compost were some of the practice adopted.

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	Actual
2011	59

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Our watershed and forests are being deforested, sometimes for agricultural, city or home development. The increase of sedimentation of rivers and streams resulting from deforestation results in floods during the rainy season

What has been done

Puerto Rico Agricultural Extension Service in joint efforts with government agencies (Department of Natural Resources and Environment, ARPE [Regulations and Permits Administration], Natural Resources Conservation Service and), non-government agencies, community, volunteers, and schools) promoted and helped develop reforestation projects to enhance the natural environments around communities. The establishment of tree nurseries by the DNRA was part of the efforts to produce tree seedlings of native trees for reforestation projects. New environmental leaders were developed in our communities.

Results

Fifty-nine (59) reforestation projects were established as a result of the joint efforts to help reduce soil erosion and sedimentation of our watershed and rivers. These will also help to conserve endangered native trees and habitats for wildlife species and enhance the community. This increased concern about the environment and reforestation in the community, contributed to a

higher number of reforestation projects in schools.

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	Actual
2011	30

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Fire in forests and rangelands increases during the dry season. Weather changes influence the dynamics of forests and range ecosystems. The development of areas around the forests and range ecosystems also increase the potential of wild land fires and loss of human lives. Landowners? are affect directly by the fires destroying rangelands and exposing the lives and communities nearby.

What has been done

PRAES Joined efforts with local and federal government agencies concerned with the incidence of fires to encourage farmers to adopt fire prevention practices to control and diminish their impact. They developed educational material on fire prevention developed for children, youth and farmers; and prepared and participated in radio programs to create awareness and encourage the adoption of fire prevention practices in forests and rangelands.

Results

Seventy-three per cent (73%) of landowners and community members trained adopted practices on fire prevention in forests and rangelands. Property owners and communities joined forces to meet those challenges in protecting property and lives.

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.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Number of acres in improved pastures.

Not Reporting on this Outcome Measure

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	Actual
2011	44

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a great concern for pollution prevention and mitigation of natural resources. Soil erosion and water runoff in agricultural lands affects watersheds, rivers, and coastal reefs. Agencies, municipalities, landowners, and the public share a responsibility to protect and conserve our environment.

What has been done

PRAES and local and federal agencies are working educating farmers, communities and citizens to minimize losses by implementing management practices to diminish soil losses, deforestation and water runoff that will help to impact to water quality. Trainings, educational workshops and school activities were made to create awareness of global changes to reduce pressure for deforestation and forest degradation. Educational and economic programs encourage farmers to undertake practices that mitigate and protect natural resources.

Results

Forty-four per cent (44%) of persons trained adopted practices for pollution prevention and mitigation of natural resources. The mitigation of potential adverse impacts would be achieved through implementation of BMPs, development of project that help to control, diminish or mitigate pollution causes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation

Outcome #8

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	Actual
2011	46

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Improper use of agricultural practices harms air and water quality. The use of pesticides, an important part of modern agriculture, poses a potential threat to non-target organisms, including humans. Miscellaneous compounds such as fuels, solvents, paints, heavy metals and waste products may be sources of agricultural pollution.

There are practical ways to ensure that risks to the environment are minimized without sacrificing agricultural and economic productivity. The use of herbicides and insecticides can be minimized through Integrated Pest Management.

What has been done

Workshops, demonstration and site visits were used by extension specialists and agents to encourage proper storage, mixing, and handling of pesticide to minimize risks to the environment.

Results

Thirty-one per cent (31%) of persons trained adopted recommended practices for air and water quality. Agricultural practices implemented help to prevent erosion, reduce movement of pesticide and runoff from agricultural lands.

4. Associated Knowledge Areas

KA Code	Knowledge Area
141	Air Resource Protection and Management

Outcome #9

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	Actual
2011	91

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

It is very important for the future of our agriculture to develop and improve our ability to maintain our natural resources. There a great concern among farmers on the potentially negative impacts of agriculture can on soil, air and water. Local and federal environmental agencies developed educational programs to increase the number of farmers complying with environmental regulations.

What has been done

PRAES encourage the use of BMP?s and jointly with other local and federal agencies implemented workshops and demonstrations. PRAES helped to prepare farm development plans that minimize the impact of pollution across a range of farming activities in compliance with environmental regulations.

Results

Fifty-two per cent (52%) of farmers trained comply with the soil, air and water regulations. Organic and inorganics fertilizers use and disposal, water runoff and pesticide control, unpleasant odors from organic manures and wastes were some of the issues that farmers minimize with the adoption of management practices.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
141	Air Resource Protection and Management

Outcome #10

1. Outcome Measures

Number of farmers that adopted the fertilization practices.

Not Reporting on this Outcome Measure

Outcome #11

1. Outcome Measures

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

Not Reporting on this Outcome Measure

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
- Other (Avail. econo. incentives)

Brief Explanation

During 2011 Puerto Rico had the second rainiest year in recorded history with 87.82 inches of rain (National Weather Service of Puerto Rico). Farmers were severely affected by atmospheric events, especially heavy rains, which affected range production, caused floods or mud slides, which increased the soil erosion and sedimentation of rivers and watersheds. Although no hurricanes affected the island directly, the floods and winds they brought did great damage. Especially Hurricane Irene, which caused damages between \$70

million and \$250 million to our agriculture (mainly in the eastern and south eastern parts of the island) due to flooding, landslides, and strong winds.

Changes in priorities set by the administration (due to budget cuts) affected program outcomes, and changes in public policy and regulations caused farmers to change their priorities and to postpone projects. Also, economic incentives to farmers were reduced due to lack of funds.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Family 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
607	Consumer Economics	10%			
724	Healthy Lifestyle	20%			
801	Individual and Family Resource Management	30%			
802	Human Development and Family Well-Being	40%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	17.0	0.0	0.0	0.0
Actual Paid Professional	20.9	0.0	0.0	0.0
Actual Volunteer	32.0	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
787237	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
393618	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

- Participate in radio/TV Programs
- Write Proposals
- Curriculum and educational materials development.
- Training-the-trainers
- Workshops
- Establishment of collaborations
- Consulting
- Exhibitions (Billboards in malls and public places with informative brochures and other educational material).
- Educational campaigns

2. Brief description of the target audience

Extension agents, home economists, PRAES specialists, professionals from other agencies, parents, families, children, youth, elder people, volunteers, new couples, and the general public.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	21371	5535	8147	6393

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	2	0	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of persons trained in parenting and related areas.

Year	Actual
2011	2009

Output #2

Output Measure

- Number of persons trained in aging aspects.

Year	Actual
2011	1426

Output #3

Output Measure

- Number of consumers that completed the Consumer Education course.

Year	Actual
2011	1453

Output #4

Output Measure

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

Year	Actual
2011	1028

Output #5

Output Measure

- Number of Workshpops, trainings, and meetings offered.

Year	Actual
2011	580

Output #6

Output Measure

- Number of collaborations/established.

Year	Actual
2011	271

Output #7

Output Measure

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

Year	Actual
2011	1573

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 volunteers/persons that gained knowledge in aging aspects.
3	Number of volunteer community leaders trained in family relations and related areas.
4	Number of consumers that adopted the practice of preparing their individual family budget.
5	Number of persons that reduced their risk levels upon the completion of one or more recommended lifestyles.

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	Actual
2011	1717

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Family violence statistics have an increasing tendency. Complex new family structures limit parents in providing positive role models that promote positive values and changes that improve family life.

What has been done

During three months courses were offered on Successful Parenting, Family Crisis, and Family Strengths. A gamut of parents, single female and male parents, grandparents raising grandchildren, and young mothers, as well as church, school and community members and local government representatives participated.

Results

A total 1,717 persons reported improved parenting skills. One hundred and fifty (150) community members including children benefitted. Success achievement indicators were a consistent and constant active participation, open communication, and participation in community activities.

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Number of volunteers/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	Actual
2011	366

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Puerto Rican society is rapidly aging and individuals have a longer life expectancy. Population evanescence is a critical social issue.

What has been done

A course on "Reevaluation of the aging adult" was offered to increase participants' knowledge of the aging process and develop life skills to face loss, loneliness, and depression.

Results

of 1,426 participants in the course, 170 were elderly persons. A total of 366 volunteers/persons gained knowledge in aging aspects. Participants achieved positive attitudinal change towards aging, self-esteem, loss, loneliness, and other situations related to the aging process. They expressed decreased emotional loneliness and an improvement in relations with family members and friends. Extension educators will continue to offer this course to more elderly.

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 trained in family relations and related areas.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	161

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 consumers that adopted the practice of preparing their individual family budget.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	560

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The economic global crisis forces families to face increasing hardships, difficulties, and limitations. Families must deal with unemployment, inflation and other similar situations that make the proper use and management of their resources more complicated. The decision making process tests families with a series of options of either/or choices among the least critical of challenging scenarios. Families need to be educated and advised on knowledge and skills in the management of their limited resources. Likewise, family members must be assisted to develop positive attitudes in order to face these difficult situations.

What has been done

A total of 14 courses were offered by home economists of the Family Sciences and Consumer Program to mothers heads of households, low-income families, and disadvantaged individuals displaced due to disabilities, unemployment, and other personal and economic life changing situations. The main course was "Facing difficult times?". Other topics were consumer rights and protection, savings planning, and family budget.

Results

A total of 260 families were benefited. Many of the participants were referred by insular government agencies. Seventy-seven percent (77%) of the beneficiaries increased their knowledge and developed skills in budget preparation, money use, financial planning, identification and establishment of priorities according to their needs and resources. They also developed positive attitudes in controlling unnecessary expenses.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #5

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	1181

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Public Policy changes
- Competing Programmatic Challenges
- Other (retirement of personnel)

Brief Explanation

Food and Nutrition Specialist and the Health Education Specialist retired during 2011.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 5

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 FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	8.8	0.0	0.0	0.0
Actual Paid Professional	7.4	0.0	0.0	0.0
Actual Volunteer	2.0	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
278092	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
139046	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

- Food managers food safety course was updated.
- Worked in collaboration with the communication media.
- Continued working in partnership with other agencies.
- Offer Fight BAC! And Protect your baby curriculum to consumers.
- AES Home Economists worked in Exhibitions, information centers, and radio talk shows on food safety subjects.
 - Food Safety Courses were offered to Food Establishment managers. PRAES and personnel of other agencies
- Trainings: Emphasized education on institutions that serve At-Risk Population in the Food Code regulations, Hazard Analysis and Critical Control Points, Food Defense, Allergens, and others.

2. Brief description of the target audience

Extension professionals and other professionals, Parents and persons that plans/buys/prepares food for the family, Consumers with an emphasis on At risk Population, Persons in Charge of Retail Food Establishments

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	12044	6265	4071	881

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

Patent Applications Submitted

Year: 2011
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	2	0	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of consumers completing one Food Safety educational curriculum for consumers.

Year	Actual
2011	877

Output #2

Output Measure

- Number persons in charge of food establishments completing Food Safety Course.

Year	Actual
2011	4002

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 adopted three or more of eight 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	Actual
2011	837

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

During 2008 CDC reported 1,1034 outbreaks due to foodborne illnesses. The people affected by these illnesses may have diarrhea, vomiting, an upset stomach, fever, or cramps. The real problem is that foodborne illnesses may be caused by bacteria in the food or viruses that are transmitted by food eaten a few hours or several days ago. Most of these foodborne illnesses can be avoided with safe handling practices. There many regulations that help promote safe food handling but when it comes to consumers, we depend mainly on education from mass media and from short courses on Fight BAC_i like the offered by PRAES.

What has been done

For Fight BAC! Courses the teaching field personnel and volunteers selected a minimum of four lessons out of 10 available based on the consumers' needs. We included lessons on how to properly handle food during emergencies and a topic on food security in which we teach consumers on how to always maintain an emergency food supply and how to keep it safe.

Results

90% of the consumers completing the Fight BAC course adopted at least one safe handling practice; 30% used a food thermometer to verify cooking temperatures; 100% washed their hands; 47% kept food for two hours or less in the Danger Zone; and 92% separated food to avoid cross contamination.

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	Actual
2011	3870

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Ever since, the Puerto Rico Department of Health adopted the Food Code in 2000, the Health Inspector requires that persons in charge of food establishments must demonstrate that he/she has knowledge in proper food handling practices and verifies that they have approved a Food Safety Course. The person in charge that is not properly food safety trained, nor has approved a Food Safety Course is referred to PRAES.

What has been done

PRAES Family Science professionals (FSP) offered Food Safety courses to persons in charge of food establishments. Health Inspectors participated in each course.

Results

Of 4002 participants completing the Food Safety Course, 97% approved the certification exam.

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 adopted three or more of eight 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	Actual
2011	1923

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

According to PR Department of Health there are 39,919 food establishments registered. In 2011 only 36%, were inspected.

As part of their routine inspections the Health Inspectors verify that food managers are measuring and recording temperatures of Potentially Hazardous Foods. They are also required to verify that Food Managers have calibrated food thermometers and temperatures of food and refrigerated equipment. They must also verify any other practice that may put in risk the safety of food or situation that may cause an outbreak.

What has been done

The PRAES Food Safety course consists of 13 lessons which include all the knowledge areas that a person in charge of a Food Establishment must have. During the course trained professionals emphasize on safe food handling in order to prevent foodborne illnesses.

Results

Seventy per cent (70%) of the people completing the Food Safety course adopted at least three or more safe food handling practices; 57% planned on having a written food temperature register; 54% had food thermometers and were measuring cooking temperatures; 66% have separate cutting boards; 65% used utensils or disposable gloves when handling ready-to-eat food; 74% washed their hands; and 68% used a safe method for thawing frozen food.

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

- Economy
- Appropriations changes
- Competing Programmatic Challenges

Brief Explanation

During 2011, several FSP that were working in Food Safety retired and the positions are not being filled. To this lack of personnel we have to add that of the FSP still working in Food Safety, the majority only have 20% of their POW assigned to Food Safety.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

A pre-post test was administered to persons in charge of food establishments to measure change in knowledge after taking the Food Safety course. Our main evaluation results are stated in the Outcome #2 (Change of knowledge Outcome Measure) where 97 the participants of the Food Safety course approved the examination.

Key Items of Evaluation

The number of persons in charge of food establishments that approved the certification exam.

V(A). Planned Program (Summary)

Program # 6

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 FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	40.9	0.0	0.0	0.0
Actual Paid Professional	30.7	0.0	0.0	0.0
Actual Volunteer	19.0	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
1155642	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
577821	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.
- Competitive activities/events.
- 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.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	8938	0	54282	12689

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	1	0	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Actual
2011	1133

Output #2

Output Measure

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

Year	Actual
2011	2173

Output #3

Output Measure

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

Year	Actual
2011	11551

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	Actual
2011	4243

Output #5

Output Measure

- Number of children/youth who participated in scientific process training.

Year	Actual
2011	125

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of children/youth who demonstrated thinking managing skills (decision making, problem solving, planning, organization and service learning, according to the Targeting Life Skills Model).
2	Number of children/youth who demonstrated improved relating skills (communication).
3	Number of children/youth who assumed demonstrated improved giving and working skills (leadership, community service volunteering, teamwork).
4	Number of children/youth who demonstrated improved being and living skills (self-esteem and healthy lifestyle choices).
5	Number of individuals applying science process skills, including incorporation of science learning in community service, enrollment in SET related post-secondary education, and entrepreneurship/career success.

Outcome #1

1. Outcome Measures

Number of children/youth who demonstrated thinking managing skills (decision making, problem solving, planning, organization and service learning, according to the Targeting Life Skills Model).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	1955

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The need to learn how to be healthy begins in early childhood with good eating habits. An unbalanced diet, sedentary lifestyle and lack of knowledge contribute to the problem of childhood obesity.

What has been done

The Four-H Clubs and Youth Program established the production of nutritive food in home and community ecological vegetable gardens as an educational strategy. PRAES personal developed short courses and workshops about the establishment, maintenance, production and nutritional value of different crops that are adaptable to small spaces in the rural and urban areas. Thinking and management skills were promoted through this subject matter.

Results

One thousand five hundred and three (1,503) youth/4H members established vegetable gardens in their schools, homes and/or communities. This youth/4-H members demonstrated the following skills: 399 increased decision making skills, 24 acquired life skills in problem solving, 36 developed skills in planning organization, and 45 in service learning, according to the Targeting Life Skills Model.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #2

1. Outcome Measures

Number of children/youth who demonstrated improved relating skills (communication).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	2959

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 demonstrated improved giving and working skills (leadership, community service volunteering, teamwork).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	2933

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 being and living skills (self-esteem and healthy lifestyle choices).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	1702

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 individuals applying science process skills, including incorporation of science learning in community service, enrollment in SET related post-secondary education, and entrepreneurship/career success.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	816

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

- Economy
- Public Policy changes
- Competing Public priorities

Brief Explanation

The people feel that we have an unstable economy. Changes in public policy due to the situation of economy are expected.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

In order to determine changes in life skills in 4-H youth, a retrospective questionnaire was self-administered to 63, 4-Hers ages 14 to 18. This group averaged four years as 4-H members. They have participated in every curricular area including science and technology; leadership, citizenship and community; and healthy lifestyles. Life skills are promoted through all of these subject matter educational activities. Life skills were measured on a 5-point Likert Scale (from never to always). There were significant changes in all five life skills measured: Teamwork (Pre: 3.65, Post: 4.17), Decision making (Pre: 3.21, Post: 4.12), Solving Problems (Pre: 3.46, Post: 4.30), Communication (Pre: 3.39, Post: 3.54), and Goal setting (Pre: 3.53, Post: 4.50). Results show that the Puerto Rico Agriculture Extension Service's 4-H program is significantly and positively facilitating the development of important life skills in our youth.

Key Items of Evaluation

Life skills development in 4-H

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Community Resources Development by Means of Fostering Sustainable 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
608	Community Resource Planning and Development	40%			
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	30%			
805	Community Institutions, Health, and Social Services	30%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	31.8	0.0	0.0	0.0
Actual Paid Professional	26.9	0.0	0.0	0.0
Actual Volunteer	44.0	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
1013022	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
506511	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
 - Conference/training in areas of social investment, marketing, market study and analysis, self employment opportunities identification, and community based business
 - Participative Action Research strategies such as "reading the streets", participant observation, ethnographies, life histories, focal groups, informal interviews, and reflexive diaries
 - Establishment of strategic alliances with government agencies, non governmental organizations and community institutions to collaborate in the promotion of community based economic initiatives
 - Radio programs with the participation of community members and field personnel to promote community based economic initiatives
 - Workshops and meetings
 - A new curriculum in Emergency Management was developed
 - Community coalitions with volunteer organizations, community services organizations, institutions, and other agencies such as Rural Development were established
 - Seminars with community services institutions that offer assistance in case of disaster or emergency, including volunteer organizations, non-profit groups, and government agencies, were carried out.

2. Brief description of the target audience

Community participants (i.e., individuals and families), community leaders, extension professionals, and other professionals.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	15078	2840	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	2	0	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of persons trained in community-based business.

Year	Actual
2011	453

Output #2

Output Measure

- Number of leaders trained on community organization and empowerment (at least four workshops).

Year	Actual
2011	343

Output #3

Output Measure

- Number of leaers trained on emergency and disaster situations (at least four workshops).

Year	Actual
2011	461

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.
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 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	Actual
2011	334

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Puerto Rico has experienced a negative economic growth for the past 5 years with an negative average growth of over 4% per year. Puerto Rico's CRD continues working hard in training and developing community entrepreneurs to create new, and expand existing markets.

What has been done

The Community Entrepreneurial "Tool Box" has been in place for nearly three years. In 2011 we increased threefold the number of participants trained in entrepreneurial and business creation skills.

Results

During 2011, 74% of the participants trained in community-based business have applied one or more of the recommended practices in the process of developing a community-based business. Compared to 2010, this represents a growth of 237% of the participants that put in place entrepreneurial initiatives and skills such as: human resources analyses, viability studies, evaluation of the competition, marketing, permits and incorporation compliance requirements. Economic ventures and business proposals are steadily flourishing throughout the Agricultural Extension Service regions thanks to the CRD's "Community Entrepreneurial Toolbox" (36 in 2011 compared to 32 in 2010).

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	Actual
2011	58

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

As expected, the "Community Entrepreneurial Toolbox" has opened the opportunity to allow our stakeholders who benefits from Puerto Rico's Agricultural Extension Service (PRAES) courses and training opportunities in Agriculture and Family Sciences activities, to use the acquired skills and knowledge to promote economic activity and market their skills. Therefore opening new business and community based economic production activities that result in new sources of income and jobs creation.

What has been done

Stakeholders have been widely trained on the "Community Entrepreneurial Toolbox" workshop series together with other marketable skills in the areas of artisanship, craftsmanship, tailoring, children and elderly services and agricultural production.

Results

In 2011 we experienced an increase of 387%, compared to 2010, in the number of community-based business being established and an output of 232% over the expected target. CRD's strategy of providing entrepreneurial training to those stakeholders who benefit from PRAES' other courses which provide marketable skills in family science and agriculture has resulted effective. Most of these 58 community-based and micro-businesses being created are in areas of agricultural production, food confection, and services closely related to the Agriculture and Natural Resources, as well as Family Sciences curricula. This has resulted in the creation of 131 new jobs and has provided some (or additional income) to 481 participants.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

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	Actual
2011	42

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

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	Actual
2011	546

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The redesign and practical elimination of the Puerto Rico Government's Office for the Financing of Socioeconomic and Self-reliant Community Initiatives has had an effect in the discontinuation of several community-based projects. This has left PRAES without a natural partner, but with the opportunity to fill this gap. Further, the economic crisis has provided PRAES with an influx of displaced or early retired workers seeking to spend their spare time in productive activities or to increase their job marketability through added productive and human capital skill that CRD provides.

What has been done

With reduced state resources to foster community development projects, most of the community leadership efforts are redirected to seek external funds or nurture economic activity within the community with the support of CRD personnel. Intensive grant writing and community based business plan workshops have been carried out in order to fill this gap.

Results

During 2011 we surpassed our expected outcome target by 364%. Most leadership is engaged in economic development, job creation, natural resources and farmland conservation, as well as health promotion initiatives.

4. Associated Knowledge Areas

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

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	Actual
2011	9

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

- Economy
- Public Policy changes
- Competing Public priorities

Brief Explanation

The implantation of a new curriculum in Emergency Management and the phase-out of the old curriculum have resulted in an unexpected gap in outcome #5. Since Puerto Rico's CRD program has just introduced a new curriculum, it is expected that during 2012 we will see the accomplishments of the intensive educational campaign that was carried out in 2011. The extended and still growing economic crisis in Puerto Rico, with a labor force participation rate of just 42% of the able workers, keeps providing AES in Puerto Rico with both new challenges and new opportunities for human and community development. The redesign and practical elimination of the Puerto Rico Government's Office for the Financing of Socioeconomic and Self-reliant Community Initiatives has had an effect in the discontinuation of several community-based projects. This has left communities with reduced, if any, state resources to foster community development projects..

V(I). Planned Program (Evaluation Studies)

Evaluation Results

We conducted the "First Community Leaders Encounter" in collaboration with U.S. Rural Development where we conducted a Nominal Group evaluation. The participants were asked to provide areas of utmost preoccupation and interest for their communities that will allow CRD and RD to direct their collaboration in community development. Sixty-eight (68) community leaders participated in six groups and concluded that their main concerns are: 1) Problems with inadequate infrastructure (mostly water community systems, electric

power infrastructure and maintenance, and affordable and adequate housing); 2) Social and economic inequality (lack of economic, educational opportunities, as well as equal protection by the state; 3) Government apathy, or as most participants vividly pointed out: "sloppiness" (mostly lack of governmental compliance with its own environmental regulations, and lack of government's compliance in providing vulnerable communities with the rights and services it provides to other groups in society.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Climate Change

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
104	Protect Soil from Harmful Effects of Natural Elements	20%			
111	Conservation and Efficient Use of Water	20%			
112	Watershed Protection and Management	15%			
125	Agroforestry	15%			
131	Alternative Uses of Land	15%			
805	Community Institutions, Health, and Social Services	15%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	4.0	0.0	0.0	0.0
Actual Paid Professional	8.4	0.0	0.0	0.0
Actual Volunteer	0.0	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
317980	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
158990	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

- Curriculum preparation
- Mass media use to disseminate information
- Collaboration with local government agencies

2. Brief description of the target audience

Adults, county Extension personnel, leaders, volunteers, youth

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1324	5454	281	65

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	1	0	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of training sessions offered on climate change.

Year	Actual
2011	0

Output #2

Output Measure

- Number of people who received capacity development (workshops, seminars, conferences) on climate change.

Year	Actual
2011	0

Output #3

Output Measure

- Number of training sessions offered on water quality, watershed protection, and management.

Year	Actual
2011	19

Output #4

Output Measure

- Number of people who received capacity development (workshops, seminars, conferences) on water quality, watershed protection, and maintenance.

Year	Actual
2011	1070

Output #5

Output Measure

- Number of training sessions offered on water collection, storage and re-use for agricultural purposes.

Year	Actual
2011	3

Output #6

Output Measure

- Number of collaborative agreements developed to protect water quality.

Year	Actual
2011	4

Output #7

Output Measure

- Number of training sessions offered in agroforestry, soil erosion, and storm water runoff control.

Year	Actual
2011	12

Output #8

Output Measure

- Number of people who received capacity development in agroforestry, soil erosion, and storm water runoff control.

Year	Actual
2011	294

Output #9

Output Measure

- Number of training sessions on soil erosion and water environmental regulations.

Year	Actual
2011	10

Output #10

Output Measure

- Number of people who received capacity development on soil erosion and water environmental regulations.

Year	Actual
2011	135

Output #11

Output Measure

- Number of non-formal education courses offered on leadership development for professionals to assist in the development of emergency plans.

Year	Actual
2011	2

Output #12

Output Measure

- Number of conferences offered on natural disasters and emergency management.

Year	Actual
2011	3

Output #13

Output Measure

- Number of community leaders/people who participated in natural disasters and emergency management conferences.

Year	Actual
2011	396

Output #14

Output Measure

- Number of people who participated in conferences or capacity development on land-use.

Year	Actual
2011	55

Output #15

Output Measure

- Number of people who attended public hearings on land-use.

Year	Actual
2011	67

Output #16

Output Measure

- Number of presentations conducted on public hearings for land-use.

Year	Actual
2011	8

Output #17

Output Measure

- Number of people who received capacity development on water collection, storage, and re-use

Year	Actual
2011	173

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of people who adopted recommended practices for water quality.
2	Number of people who established watershed protection practices.
3	Number of people who adopted practices to improve water collection, storage, and reuse efficiency.
4	Number of projects developed as a result of a collaboration with other agencies.
5	Number of people who adopted agroforestry practices.
6	Number of people who adopted/implemented soil erosion control measures.
7	Number of people who comply with environmental soil erosion and water requirements.
8	Number of communities that developed an emergency plan.
9	Number of action plans established to follow-up on land conservation.

Outcome #1

1. Outcome Measures

Number of people who adopted recommended practices for water quality.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	107

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

Number of people who established watershed protection practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	291

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Number of people who adopted practices to improve water collection, storage, and reuse efficiency.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	56

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #4

1. Outcome Measures

Number of projects developed as a result of a collaboration with other agencies.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

Number of people who adopted agroforestry practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	137

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
125	Agroforestry

Outcome #6

1. Outcome Measures

Number of people who adopted/implemented soil erosion control measures.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	215

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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
125	Agroforestry

Outcome #7

1. Outcome Measures

Number of people who comply with environmental soil erosion and water requirements.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	94

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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
125	Agroforestry

Outcome #8

1. Outcome Measures

Number of communities that developed an emergency plan.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	9

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

Outcome #9

1. Outcome Measures

Number of action plans established to follow-up on land conservation.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
104	Protect Soil from Harmful Effects of Natural Elements
111	Conservation and Efficient Use of Water
131	Alternative Uses of Land
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
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

As stated in the Plan of Work, the first year of the present cycle was going to be devoted to the development of a curricular guide on climate change, entitled "El cambio climático: impacto sobre la producción agrícola y prácticas de adaptación" (Climate Change: its impact on agricultural production and adaptation practices) in order to have an educational tool for the field personnel.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Sustainable Energy

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 FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	5.0	0.0	0.0	0.0
Actual Paid Professional	5.1	0.0	0.0	0.0
Actual Volunteer	0.0	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
191542	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
95770	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

- Included workshops and meetings aspects of sustainable energy with emphasis on structures, waste management and irrigation equipment, and energy conservation.
- Established collaborations with government agencies (Puerto Rico Electric Power Authority; Environmental Quality Board; Departments of Agriculture, Environmental and Natural Resources, and Education; Puerto Rico Aqueducts and Sewage Authority; USEPA; USDA; NRCS; and others) and with our partners in the University of Puerto Rico and other educational institutions.
- Designed and made plans that include and promote energy sustainability and efficiency in structures, waste management systems and irrigation systems (new facilities or improvement to existing facilities).
- We have a research/Extension project of drying high quality coffee beans using sustainable energy, like solar collectors to raise air temperature and photovoltaic panels to give energy to air blowers. The Agricultural Experiment Station collaborates by providing the facilities at the Mayaguez Campus and the Puerto Rico Department of Agriculture by funding us for 1.5 years.

2. Brief description of the target audience

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

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1044	1330	0	0

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of workshops and meetings offered which include aspects of energy sustainability and efficiency.

Year	Actual
2011	25

Output #2

Output Measure

- Number of collaborators from government agencies, partners in the University of Puerto Rico, and other educational institutions.

Year	Actual
2011	28

Output #3

Output Measure

- Number of designs and plans that include and promote energy sustainability and efficiency in structures, waste management systems, and irrigation systems (new facilities or improvement to existing facilities).

Year	Actual
2011	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of clients that participated in workshops and meetings offered, which include aspects of energy sustainability and efficiency.
2	Number of government agencies and partners in the University of Puerto Rico and other educational institutions that collaborate in projects that promote energy sustainability and efficiency.
3	Number of clients that adopted designs and plans that include and promote energy sustainability and efficiency in structures, waste management systems, and irrigation systems (new facilities or improvement to existing facilities).

Outcome #1

1. Outcome Measures

Number of clients that participated in workshops and meetings offered, which include aspects of energy sustainability and efficiency.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	997

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Farmers in Puerto Rico are in serious economic problems due to the high cost of energy in their projects. Most of them don't know how to reduce their electrical bills. There is an imminent need for someone to explain them sustainable energy practices and how they can be applied.

What has been done

We gave over 30 workshops to farmers around the island on sustainable energy (PV) applied to greenhouse operation and/ or opened hydroponic system to minimize the cost of energy bills. We explained that the government has some incentives for farmers who change their electrical dependence from crude oil to sustainable energy production.

Results

As a result of training and information dissemination on sustainable energy, 997 people participated in the workshops and meetings around the island. The participants were very enthusiastic and eager to learn about energy efficiency and sustainability.

4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
405	Drainage and Irrigation Systems and Facilities

Outcome #2

1. Outcome Measures

Number of government agencies and partners in the University of Puerto Rico and other educational institutions that collaborate in projects that promote energy sustainability and efficiency.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	34

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
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
405	Drainage and Irrigation Systems and Facilities

Outcome #3

1. Outcome Measures

Number of clients that adopted designs and plans that include and promote energy sustainability and efficiency in structures, waste management systems, and irrigation systems (new facilities or improvement to existing facilities).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	22

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The production of electrical energy in Puerto Rico depends almost 90% on crude oil. The high cost of oil and electrical energy production (a rise in energy costs from \$ 0.23 per kwh to \$0.29 per kwh on a commercial basis during the past year) threaten to push some farmers out of business.

What has been done

With the training and support on sustainable energy of the agricultural agent, Government incentives, and labor from the private sector some farmers began to change from fossil energy to sustainable energy consumption.

Results

We have several hydroponic producers that changed their scene and went up 100% using (PV) sustainable energy. Other producers went from 40% to 60% using sustainable energy. Almost 95% of them changed their electrical dependence from oil because they received incentives from the government.

4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies
402	Engineering Systems and Equipment
403	Waste Disposal, Recycling, and Reuse
405	Drainage and Irrigation Systems and Facilities

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (Availability economic incentives)

Brief Explanation

On outcome #2 we have a difference from the target mainly due to the fact that there is a time gap from the time that incentives are offered and when they are actually awarded. This time lag worsens with competing public priorities on an economically tight atmosphere.

On output # 3 Tight government regulations in which only Certified Electrical Engineers and electrical experts on solar or wind energy can design, make plans and establish those kinds of sustainable facilities limits the work of our specialists. Our agricultural agents can evaluate proposals for sustainable energy establishment and give recommendations to farmers with the advice of the engineers.

In PR Extension Service we can design plans and structures to produce sustainable energy from biogas from dairy, swine or other waste.

On outcome # 3 we have an error on the quantitative target it was supposed to be 50 not 500. We made the corrections in the 2012 plan of work. On this item we have a difference, due to the fact that this is the first year of this plan and have realized that projects will depend on government incentives and those incentives have not been clearly defined until recently.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Global Food Security and Hunger

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
131	Alternative Uses of Land	5%			
205	Plant Management Systems	15%			
307	Animal Management Systems	15%			
501	New and Improved Food Processing Technologies	10%			
603	Market Economics	20%			
606	International Trade and Development	5%			
610	Domestic Policy Analysis	10%			
704	Nutrition and Hunger in the Population	20%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	6.0	0.0	0.0	0.0
Actual Paid Professional	7.5	0.0	0.0	0.0
Actual Volunteer	0.0	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
282984	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
141492	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

- Prepared Curriculum and educational material
- Conducted workshops
- Offered technical training meeting
- Established collaboration between the government, the private sector and the academia
- Mass media used to disseminate information

2. Brief description of the target audience

Agricultural county agentes, home economists, farmers, agro entrepreneurs, government professionals, housewives, youth aged 13-18

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	14157	5546	2959	2660

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	2	0	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of individuals that were oriented about global food security.

Year	Actual
2011	12761

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of feasibility studies for agricultural enterprises,
2	Number of individuals that increased their knowledge about international trade and development.
3	Number of public policy issues related with national food security that were reviewed or proposed.
4	Number of marketing agreements established between local farmers and distributors or other components of the food supply chain.
5	Percentage increased in agricultural production.
6	Number of farmers that established sustainable agricultural systems.
7	Number of fallow "cuerdas"(acres) sowed or prepared for animal production.
8	Number of drainage or irrigation facilities improved or established according to recommended practices.
9	Number of farmers that adopted one or more recommended post harvest practices.
10	Number of consumers that adopted the food basket as a guide for food security at the household level.
11	Number of domestic and community gardens established.

Outcome #1

1. Outcome Measures

Number of feasibility studies for agricultural enterprises,

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	260

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
307	Animal Management Systems

Outcome #2

1. Outcome Measures

Number of individuals that increased their knowledge about international trade and development.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	5987

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
606	International Trade and Development

Outcome #3

1. Outcome Measures

Number of public policy issues related with national food security that were reviewed or proposed.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	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
610	Domestic Policy Analysis

Outcome #4

1. Outcome Measures

Number of marketing agreements established between local farmers and distributors or other components of the food supply chain.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In Puerto Rico it is necessary to reduce food miles to ensure a continuous fresh and nutritious food supply and reduce transportation footprints.

What has been done

We included the Development of Local Food Chain in the Food Security curricular guide for farmers and presented a forum.

Results

Twenty marketing agreements were established between local farmers and import/distributors. These contributed to reduce food miles, increase local economy and reduce footprints.

4. Associated Knowledge Areas

KA Code	Knowledge Area
603	Market Economics

Outcome #5

1. Outcome Measures

Percentage increased in agricultural production.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Number of farmers that established sustainable agricultural systems.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	92

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
307	Animal Management Systems

Outcome #7

1. Outcome Measures

Number of fallow "cuerdas"(acres) sowed or prepared for animal production.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	1030

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
307	Animal Management Systems

Outcome #8

1. Outcome Measures

Number of drainage or irrigation facilities improved or established according to recommended practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	22

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
307	Animal Management Systems

Outcome #9

1. Outcome Measures

Number of farmers that adopted one or more recommended post harvest practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	135

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies

Outcome #10

1. Outcome Measures

Number of consumers that adopted the food basket as a guide for food security at the household level.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	752

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
704	Nutrition and Hunger in the Population

Outcome #11

1. Outcome Measures

Number of domestic and community gardens established.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	1246

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Puerto Ricans' food security depends on imports of 85% of the foods they eat and have a high dependency on Government aid. The food consumed in the Island travels thousands of miles from the point of origin to our consumers. These and other conditions put us in a vulnerable position.

What has been done

Curriculum guides for food security aimed at farmers and housewives were prepared and all agricultural county agents and home economists were trained on these. We presented lectures, recorded TV and radio programs, and wrote press articles on this subject.

Results

All community sectors were impacted and, as a result, we helped to develop 1246 home gardens.

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

- Other (Worldwide food priorities)

Brief Explanation

Global Food Security and Hunger being an international issue that was present during the year, gave us the opportunity to develop a curriculum guide (Outcome 4) that helped to introduce the concept in the community. All of the College of Agricultural Sciences (besides the Puerto Rico Agriculture Extension personnel, which included the planned program as part of their Plan of Work) was involved in this initiative and the mass media (three TV, 21 radio programs, and our web page <http://academic.uprm.edu/mcomas/>), which gave us much visibility and helped us surpass our goals. We were also sponsored by local newspapers.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Focus groups with 80 youth were conducted to identify strategies that can take young people to contribute to increase food security for Puerto Rico. The recommended strategies were as follow:

- Contribute to the process of creating awareness among citizens about the PR food security reality and the risks that threaten it
- Set home, school, and community gardens
- Promote projects that will encourage the consumption of local food
- Increase the consumption of locally agricultural products
- Distribute seeds
- Develop small agricultural cooperatives
- Help in the conservation of agricultural land

Also, we conducted focus groups with 20 county agents from the Agricultural Extension Service to identify strategies that we can adapt to enhance food security in Puerto Rico. The strategies presented were as follow:

- Development of public policy and research for land optimal use
- Increase consumption of forages in livestock; reduce their dependency on concentrated feed.
- Development of ports contingency plans
- Planning of sowing
- Value added products
- Contract sales
- Technological innovations to increase efficiency
- Promote the storage of food at the national level and at home
- Reduce carbon footprint
- Alternative energy sources

In addition to the focus groups, pre-test and post-test in vulnerability of supply chains, climate change and the development of adaptation strategies were administered to measure knowledge acquired after training a group of agronomists. The agronomists originally identified risk factors that could impact food security in Puerto Rico, such as the decline in local agricultural production, loss of agricultural land, meteorological risks, political and economic factors, at the local level. At the end of training these factors were identified by the agronomists but framed in a global food supply chain.

Key Items of Evaluation

The identification of strategies to increase local food security.

V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

Childhood Obesity

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	50%			
704	Nutrition and Hunger in the Population	20%			
724	Healthy Lifestyle	30%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	10.6	0.0	0.0	0.0
Actual Paid Professional	8.0	0.0	0.0	0.0
Actual Volunteer	2.0	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
301046	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
150523	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

- Promote breastfeeding during first 12 months of babies' life to prevent overweight and illness (help

to enforce breastfeeding public policy, Bill 239).

- Develop and offer courses on nutrition and physical activity education for children/youth and their parents.
- Develop joint action at community level to promote and implement physical activity programs and nutrition education for parents and kids.
- Teach about school breakfast, lunch, and snacks in schools and other institutions to comply with communication 2-2007-2008 that rules expenditure and consumption of food and beverages minimum nutritional value.
- Teach retailers close to schools about best food offers according to the Puerto Rico's Kids Food Pyramid to help them comply with Bill No. 91, August 20, 1997, Free School Zone that prohibits expenditure of food with lower nutritional value close to schools.
- Promote discretionary calories food control.

2. Brief description of the target audience

Children/youngsters and their families

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	5866	1188	4265	16

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of persons that completed non-formal nutrition and physical activity education.

Year	Actual
2011	1565

Output #2

Output Measure

- Number of persons that completed non-formal harvest course and physical activity education.

Year	Actual
2011	641

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 for obesity prevalence.
2	Number of persons that reduced their obesity prevalence.
3	Number of persons that increased their physical activity level.
4	Number of persons that practice physical activity daily.
5	Number of persons that are harvesting and consuming nutritious foods from their own home or community garden.

Outcome #1

1. Outcome Measures

Number of persons that reduced their risk levels for obesity prevalence.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	1430

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Childhood obesity has become a major public health problem. Puerto Rico's childhood obesity is 22%, therefore decreasing the prevalence of childhood obesity has become a major initiative in Puerto Rico Extension.

What has been done

Seven hundred and fifty-one (751) youngsters participated in educational courses that integrated nutrition and physical activity lessons.

Results

Of the total number of participants that completed the courses, 57% decreased their consumption of sodas, 68% increased their consumption of fruits and vegetables and 84% increased their level of physical activity. Therefore, Extension courses are promoting behavior changes that can decrease risk levels for childhood obesity.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

Number of persons that reduced their obesity prevalence.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Number of persons that increased their physical activity level.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	1561

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #4

1. Outcome Measures

Number of persons that practice physical activity daily.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	659

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #5

1. Outcome Measures

Number of persons that are harvesting and consuming nutritious foods from their own home or community garden.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	333

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

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

- Other (Personnel retirement)

Brief Explanation

No external factors affected outcomes negatively. The only goal that could not be accomplished was the peer reviewed publication and this was due to the retirement of the Food and Nutrition Specialist who was in charge, among other responsibilities, to develop publications for this planned program. On the other hand, establishment of this national initiative was highly promoted by our Extension agents, therefore increasing the number of participants and, thus, surpassing our initial targets.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

No evaluation was conducted during FY 2011. An evaluation process is in place for FY 2012.

Key Items of Evaluation