

2009 University of Guam Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

The University of Guam Cooperative Extension (UOG-CES) serves the people of Guam by providing research-based knowledge through innovation community programs to foster positive change. Consistent with the concept of the engaged institution, University of Guam Cooperative Extension is committed to becoming of greater value to the Island and the Western Pacific Region. As the University of Guam's primary public service-oriented unit, Extension actively partners with other University colleges, schools, regional campuses, and distributed (distance) educational delivery systems to meet the changing lifelong educational needs of our diverse population. UOG-CES has the unique capability of bringing the University's depth and breadth of knowledge to bear in identifying and solving problems. Our research and programs link different departments and facilitate mutually beneficial collaborations between the University and external organizations, individuals, and businesses. In so doing, UOG-CES makes a vital contribution to the public and to the educational experiences of the University. Our Extension programs educate a wide variety of citizens, including individuals who make (or have the power to influence) decisions with public consequences. Extension programs seek to promote an understanding of the consequences of various alternatives and to encourage well-informed policy decisions that better serve the public interest.

As outlined in our UOG-CES plan of work, our effort is concentrated in two unit areas: Agriculture and Natural Resources, and Communities, Families, Youth, Food and Nutrition. The primary mission of the ANR Unit is to work with its clientele and partners to advance research based knowledge through extension and higher education in the food and agricultural sciences and related environmental and human sciences to benefit people and communities in Guam and the Pacific Islands. The program thrusts of ANR are carried out through Plans of Work designed by ANR faculty to address issues faced by the community as well as other individual/community educational and informational needs. CYFFN planned programs are focused on ensuring a safe and abundant food supply, helping families, youth and individuals to become mentally, physically and emotionally healthy and assisting communities in becoming sustainable and resilient to the uncertainties of economics, health and security. The unit achieves these goals through planned programs in food safety, nutrition education, community development, chronic disease prevention, and youth, communities and families.

CES led and assisted with several studies this past year under the Community Capacity Program. The Compact of Freely Associated States migrant survey was conducted in 2009 which had a direct impact of a 60% increase in federal funding to support government services from the migration of citizens from the Freely Associated States. Data sets were developed and analyzed to track the rate of homelessness on Guam, results from these analysis led to an increase in additional funding by coalitions focused assisting Guam's homeless population. Also of note for this program was the work in financial planning, especially given Guam's current economic conditions. The program focused on building wealth and reducing debt for individuals, youth, senior citizens, and families living on fixed and limited incomes. Without proper financial planning vulnerable populations struggle with rising unemployment and economic instability; increasing personal financial skills and building personal savings can prepare individuals in times of financial uncertainties. CES provided savings and money management training to parents during the 2009 Guam Head Start Program Parent Conference. Workshops were conducted on household budgeting, financial goal setting and discussing money with children and youth. Targeted populations increased their knowledge of personal finance and money management. Over 30 participants increased their skills in developing a personal household budget sheet. High school students identified their money personalities and its implication on spending and savings behaviors. Participants identified personal savings goal and ways to reduce debt.

Our youth programming has made great strides this past year. Meetings and listening sessions were conducted to ascertain how CES program can better meet the needs of target youth groups. From these meetings and sessions, UOG-CES and the Guam Juvenile Court established a partnership to offer youth entrepreneurship classes and mentoring for their clients. Programming started in February 2010; results will be reported for 2010 Annual Report. As well, the Nutrition Education for Guam program continuously collaborates with Guam's Public Schools through meetings, listening sessions, focus groups and surveys to improve or adjust programming as needed. As a result, an exercise curriculum and localized general education materials were developed and is now being used.

In the latter part of this reporting period two surveys were conducted to gather selected input craft a community food security component to the Community Development plan of work. A food stores survey was conducted to determine the variety of food available in retail stores, availability of foods to low-income households, and to determine if the USDA Thrifty

Food plan market basket can be purchased from selected retailers at or below the TFP cost threshold set by USDA. The second survey assessed sources of food production, levels of food security, and, increasing production capacity. The results from these surveys will be used in 2010 to develop the community food security project.

To increase locally processed food products in the island community, recipes for home-processing tropical fruit jams and jellies using mango and calamansi fruits were developed. Workshops on "Home Food Processing: Jams and Jellies" were delivered in the community. Preparing Jams and Jellies information, along with sample products, were displayed at various community fairs. One youth in our entrepreneurial program is developing a business plan and product to be sold to the public.

This reporting period Plant Health and Pest Management program took the lead role in solving our local Ironwood tree problem. Tens of thousands of these trees are dying across the island. On Guam, these trees are planted for windbreaks, soil erosion prevention, and beautification. Fallen leaves of these trees are also valuable sources of mulch material, and the its timber for outdoor wood stoves. Through the awarding of a competitive grant to deal with this problem, a five day conference was conducted. Conference participants included experts from Australia, the Northern Marianas Islands, Georgia, Florida, and Hawaii along with local professionals and producers. Participants learned the extent and severity of the decline of ironwood trees on Guam. Participants from the conference also learned to identify pathogens and fungi associated with the decline of these trees. Another serious plant health problem that the Plant Health Group continues to address is the recent introduction of the Coconut Rhinoceros Beetle. These beetles burrow into coconut trees and can cause the tree to die. Guam's tourism industry and local culture are highly dependent on these trees. Since September of 2007 when the beetle was first discovered here, the Plant Health and Pest Management program has procured nearly one million dollars in grants to try to eradicate the beetle. This battle is continuing and may continue for years to come.

The planned programs Home and Urban Landscape, and New Farmer have developed extension publications and other materials on sustainability and resource conservation practices for Guam's villages, schools and yards which are being used by UOG 4-H in their outreach programs with the schools. To expand the target population on Guam to promote sustainability and raise awareness regarding watershed protection, partnerships have been entered into with Government of Guam agencies such as Guam Coastal Management Program and Department of Agriculture, Fisheries Division, and mayors' offices. Publications and other materials have been developed and workshops have been conducted with the pilot village communities of Asan and Piti. Best management conservation and sustainable agricultural practices were demonstrated on multi-agency demonstration farms, new enterprises and production methods were also demonstrated. Workshops on government incentive programs and funding opportunities for farmers, and workshops for the general public on materials (windbreaks, mulching, backyard aquaculture, agro forestry, composting, etc.) in the New Farmer curriculum; a detailed discussion of impact may be found in the New Farmer program of this report.

Utilizing the resources of the University of Guam and USDA's National Institute of Food and Agriculture national network of Extension programs, UOG-CES advances its organizational goals by (a) engaging university faculty and outside partners in the identification of critical issues and priorities for research and education; (b) conducting integrated research and education programs as sustained efforts to address critical issues, resulting in tangible outcomes; (c) disseminating of research-based knowledge, ideas, information and techniques; (d) pioneering innovative educational approaches and technologies; and (e) strengthening the ability of university departments and units to meet their outreach goals by forging partnerships and providing support. UOG-CES employs these methods to achieve specific impacts that have been defined within our planned programs for specific target audiences.

This annual report reflects our continual commitment to improving the quality of life and enhancing the environment of Guam. Both the plan of work and our strategic plan provide focused approaches to measuring our progress toward these overall goals by defining expected outcomes related to change in knowledge, change in action or behavior, and change in condition.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	21.0	0.0	0.0	0.0
Actual	20.7	0.0	0.0	0.0

II. Merit Review Process

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

- Internal University Panel
- External Non-University Panel

2. Brief Explanation

As outlined in the Plan of Work, stakeholders provide essential and critical guidance to the priorities of the University of Guam Cooperative Extension during the five year plans of work. The internal panel review includes a two phase process. The first phase involves extension professionals working with stakeholders to identify critical needs and the level of problem solving. Faculty across campus will be invited as a resource professional. The second phase will include the program leaders and extension professionals working closely with other partners who can collaborate to find solutions. The partners will assess what resources and expertise can be provided.

The external partners who will be invited are government and non-government entities who can provide support and critical resources to the plans of work. The external and internal panel will serve as the coalition engaging in the critical and emerging identified issues. Assessment and relevance will be key to prioritizing extension resources to the plans of work

III. Stakeholder Input

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

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey specifically with non-traditional individuals

Brief explanation.

To ensure that UOG-CES is responsive to both the needs of the community and the mission of delivering of science-based knowledge to communities, each program unit overseeing the planned programs conduct regular informal and formal stakeholder input activities. UOG-CES sought input this reporting period from traditional and non-traditional stakeholder groups and individuals involved with youth. Meetings and listening sessions were conducted to ascertain how CES program can help better meet the needs of target youth groups. From these meetings and sessions, UOG-CES and the Guam Juvenile Court established a partnership to offer youth entrepreneurship classes and mentoring for their clients. Programming started in February 2010; results will be reported for 2010 Annual Report. As well, the Nutrition Education for Guam agents continually collaborate with Guam's Public Schools through meetings, listening sessions, focus groups and surveys to improve or adjust programming as needed.

In the latter part of this reporting period two surveys were conducted to gather selected input craft a community food security component to the Community Development plan of work. A food stores survey was conducted to determine the variety of food available in retail stores, availability of foods to low-income households, and to determine if the USDA Thrifty Food plan market basket can be purchased from selected retailers at or below the TFP cost threshold set by USDA. The second survey assessed sources of food production, levels of food security, and, increasing production capacity. The results from these surveys will be used in 2010 to develop the community food security project.

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
- Use Internal Focus Groups
- Use External Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Surveys

Brief explanation.

Stakeholder identification is generally a step-wise process. Initially, we seek to identify emerging needs within communities. This is often initiated through searches of the literature and review of demographic (census) data followed by in depth discussions with local decision-makers and others with unique knowledge about emerging needs. Once groups are broadly defined, care is taken to understand most effective mechanisms of engagement. Selection methods varied from issue to issue. Individuals were identified based on their current or past involvement to the related issue, based on a sample size of the target group, or their prior work or life experiences. Individuals were selected and invited via written correspondence to participate in stakeholder input sessions.

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

Brief explanation.

Formal and informal processes are employed to gather stakeholder input. Formal processes include the local advisory committees that are created and maintained specifically for the purpose of garnering stakeholder input. These formal advisory structures include the 4-H Youth Council, Soil and Water Conservation Districts, Workforce Investment Board, Serve Guam Commission, and advisory committees for extension units. In addition, each Extension faculty and administrator is encouraged to develop and maintain informal networks that permit them to garner input from key officials, industry representatives, and advocacy groups. Our faculty and staff are members of many key organizations at local and national levels. These connections are extremely valuable in understanding initiatives, opportunities for partnerships, and potential need. Surveys are frequently used to garner input about the effectiveness of individual programs. Focus groups are also used to test new approaches, methods and materials.

3. A statement of how the input will be considered

- To Identify Emerging Issues
- Redirect Extension Programs
- In the Staff Hiring Process
- To Set Priorities

Brief explanation.

Stakeholder input is routinely used to identify emerging issues, to redirect Extension programs and also in the

hiring process. Where stakeholder input and needs assessments show the need for different staffing, it has been used to make changes in qualifications of those hired. Additionally, it is used in setting program priorities and allocation of resources. Information gathered through the stakeholder input process is used to determine program needs and direction. In some cases, teams made up of extension agents, specialists, clientele and researchers are formed to develop and implement programs. At times, agents are able and equipped to address the issue with resources from his/her office. At other times and when issues are determined to be island-wide specialists will become more involved with program development and direction than if they are responding to a single request for information.

Brief Explanation of what you learned from your Stakeholders

From meetings, focus groups and one-to-one dialogs with at-risk youth groups we learned there is a great need for at-risk programming. There are an estimated 600 juveniles in the court system who has been diverted to community service. There is a great need for a variety of programming that is longer and more focused than 1 - 2 day training, as well as more opportunities for community service projects.

From a crop production survey we learned that of the selected sample, respondents reported 58% of their surplus crops were given away to friends and family to avoid spoilage. Respondents are willing to sell surplus crops at a deeply discounted rate to school cafeterias and non-profit organizations interested in getting fresh local crops to those in need. Fifty-four percent of respondents said more government help is need in securing storage facilities to keep crops for longer periods of time.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
947884	0	0	0

2. Totalled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	947884	0	0	0
Actual Matching	500000	0	0	0
Actual All Other	267538	0	0	0
Total Actual Expended	1715422	0	0	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from				
Carryover				
	231316	0	0	0

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Community Capacity Building
2	Tropical Food Processing and Safety
3	Guam Families, 4-H Youth Development and Communities
4	Nutrition Education for Guam
5	Animal Systems - Aquaculture Development
6	The New Farmer: Agriculture for the Next Generation
7	Plant Health and Pest Management
8	Sustainability of Small Scale Swine and Poultry Farms on Guam
9	Our Environment and Home & Urban Landscapes

V(A). Planned Program (Summary)**Program # 1****1. Name of the Planned Program**

Community Capacity Building

V(B). Program Knowledge Area(s)**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
606	International Trade and Development	10%			
608	Community Resource Planning and Development	10%			
609	Economic Theory and Methods	10%			
610	Domestic Policy Analysis	10%			
611	Foreign Policy and Programs	10%			
801	Individual and Family Resource Management	10%			
802	Human Development and Family Well-Being	10%			
805	Community Institutions, Health, and Social Services	20%			
902	Administration of Projects and Programs	10%			
	Total	100%			

V(C). Planned Program (Inputs)**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	5.0	0.0	0.0	0.0
Actual	4.3	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
160299	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
104046	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
50486	0	0	0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

Extension expertise was utilized in workforce development, community planning, youth development, environmental conservation and healthy aging. Partnerships were maintained with the Governor's Office, Department of Labor, Department of Public Health, Comprehensive Cancer Control Coalition, Department of Education, Salvation Army, Mental Health & Substance Abuse and other government and non-government agencies. Focus group facilitation, strategic planning, data collection, grant writing and logic model workshops were conducted. Behavioral risks and health surveys were conducted. Community food security focus group was convened and an assessment was conducted to determine the number of retail outlets selling fresh produce in the northern region of the island. Entrepreneurship development classes were provided to at-risk youth. Personal finance and money management workshops were conducted among head-start parents and financially vulnerable populations. ECS participated in an island-wide campaign on disaster preparedness; agencies and individuals were provided information on assembling a home emergency kit, influenza & swine flu prevention.

2. Brief description of the target audience

The target audiences in the program include: local government leaders (15 senators, 19 village mayors and 26 government agencies, 2 public corporations), numerous commissions and boards; 4 federal government agencies; non-governmental organizations. Other target audiences also include economic development professionals, small businesses and industries, community groups, youth & families and senior citizens

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	50	100	10	20
Actual	500	1000	30	250

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

Patent Applications Submitted

Year: 2009

Plan: 0

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- number of extension articles

Year	Target	Actual
2009	2	2

Output #2

Output Measure

- number of workshops

Year	Target	Actual
2009	4	20

Output #3

Output Measure

- number of brochures

Year	Target	Actual
2009	1	1

Output #4

Output Measure

- number of disseminated research results, new technology and information

Year	Target	Actual
2009	1	2

Output #5

Output Measure

- number of surveys

Year	Target	Actual
2009	1	3

Output #6

Output Measure

- number of focus groups conducted

Year	Target	Actual
2009	3	3

Output #7

Output Measure

- number of popular articles in newsletters, magazines and newspapers

Year	Target	Actual
2009	2	3

Output #8

Output Measure

- number of one to one intervention

Year	Target	Actual
2009	1	1

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	number of participants gaining increased knowledge and understanding in community development practices
2	number of participants increasing knowledge, understanding and awareness of data set models
3	number of data supported legislation enacted
4	number of entities adopting of data models for decision-making
5	number of entities developing strategic plans
6	number of entities increasing knowledge, understanding and awareness of data set models
7	number of participants increasing knowledge and skills in personal finance practices
8	Number of participants increasing knowledge in disaster preparedness programs and adopting emergency plans

Outcome #1

1. Outcome Measures

number of participants gaining increased knowledge and understanding in community development practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	15	25

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Government and NGO directors, civic and government leaders, administrators, planners, boards, conservationists, community advocates, public admin/policy students require tools and skills to develop programs that deal with their respective needs and issues.

What has been done

Government and non-government representatives participated in training and workshops on logic model, strategic planning, community development and planning. Members of the Division of Senior Citizen received training on logic model and assistance with program development. Community members were provided focus group facilitation training. University expertise was provided in grant writing for the local Fire Department and assistance with applying for federal funding on child obesity, healthy aging and cancer prevention. University students were trained in the logic model process.

Results

Participants have increased their knowledge of community development practices, which included: increased understanding of the logic model process, focus group facilitation, strategic planning, grantwriting and program development. Select agencies submitted grant application for funding on programs to increase agency capacity and expand service delivery. Students demonstrated knowledge of the logic model process in developing classroom projects to address a variety of social service programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
802	Human Development and Family Well-Being
805	Community Institutions, Health, and Social Services
902	Administration of Projects and Programs

Outcome #2

1. Outcome Measures

number of participants increasing knowledge, understanding and awareness of data set models

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	10	200

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Government and non-government community & policy planners, government and non-profit boards, coalition members, political and civic leaders, students, agency directors, conservationists, health professionals and extension professionals need data set models to make critical policy and program decisions.

What has been done

Documentation and presentation of results and findings from recent studies.

Results

In 2009, the Community Capacity Building Program has presented on several community events that were aimed at increasing the knowledge and understanding of community professionals. As a result of these events and the dissemination of data findings, 70 percent of the participants have indicated through pre-post evaluations that they have increased their awareness of these data models.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
609	Economic Theory and Methods
610	Domestic Policy Analysis
802	Human Development and Family Well-Being
805	Community Institutions, Health, and Social Services

Outcome #3

1. Outcome Measures

number of data supported legislation enacted

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

number of entities adopting of data models for decision-making

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	2	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Government and non-government community & policy planners, government and non-profit boards, coalition members, political and civic leaders, students, agency directors, conservationists, health professionals and extension professionals need data set models to make critical policy and program decisions.

What has been done

Development and dissemination of data tables from recent studies.
Documentation and presentation of results and findings from recent studies.

Results

As a result of the development and dissemination of data tables from recent studies, the Office of the Governor was able to request for a 60% increase in federal funding to support services impacted from COFA migrants. In addition, one entity utilized data models to support passage of the recent tobacco tax legislation. The third entity used data models to track the rate of homelessness; information on the current state of homelessness was used to secure additional funding for the coalition group.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
609	Economic Theory and Methods
610	Domestic Policy Analysis

- 802 Human Development and Family Well-Being
- 805 Community Institutions, Health, and Social Services
- 902 Administration of Projects and Programs

Outcome #5

1. Outcome Measures

number of entities developing strategic plans

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

number of entities increasing knowledge, understanding and awareness of data set models

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	2	7

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Government and non-government community & policy planners, government and non-profit boards, coalition members, political and civic leaders, students, agency directors, conservationists, health professionals and extension professionals need data set models to make critical policy and program decisions.

What has been done

Development and dissemination of data tables from recent studies.
Documentation and presentation of results and findings from recent studies.

Results

Participating agencies now possess the tools to make informed decisions on workforce development, community health and homelessness. Together with the knowledge gained through community data presentations, these entities have been able to retain and seek additional funding sources to sustain and improve existing services.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
609	Economic Theory and Methods
610	Domestic Policy Analysis

- 611 Foreign Policy and Programs
- 802 Human Development and Family Well-Being
- 805 Community Institutions, Health, and Social Services
- 902 Administration of Projects and Programs

Outcome #7

1. Outcome Measures

number of participants increasing knowledge and skills in personal finance practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	20	200

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Individuals, youth, senior citizens, families living on fixed and limited incomes, college students and the general public need information and skills to build wealth and reduce debt. Without proper financial planning vulnerable populations struggle with rising unemployment and economic instability; increasing personal financial skills and building personal savings can prepare individuals in times of financial uncertainties.

What has been done

CES provided savings and money management training to parents during the 2009 Guam Head Start Program Parent Conference. Workshops were conducted on household budgeting, financial goal setting and discussing money with children & youth. CES provided educational displays on personal finance and money management at expos and trade shows. ECS conducted workshops with high school students and consumers of Guma Mami and Catholic Social Services. Participants identified a savings pledge. Money management brochures were created and a saver pledge card database was created.

Results

Targeted populations increased their knowledge of personal finance and money management. Over 30 participants increased their skills in developing a personal household budget sheet. High school students identified their money personalities and its implication on spending and savings behaviors. Participants identified personal savings goal and ways to reduce debt.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #8**1. Outcome Measures**

Number of participants increasing knowledge in disaster preparedness programs and adopting emergency plans

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	5	10

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Families, senior citizens, youth, vulnerable populations, first responders, emergency personnel, crisis workers, law enforcement officials and community organizers need information on disaster preparedness and skills in adopting emergency plans. Guam is prone to typhoons and earthquakes. The island's geographic location is crucial to the defense of the nation. These realities increase the potential threats of man-made and natural disasters. Information and adopting emergency plans are key to saving lives and lessening potential risks in times of disaster.

What has been done

CES participated in the 2009 Nat'l Disaster Preparedness Month with the Guam Homeland Security Office, providing disaster preparedness materials, In Case of Emergency (ICE) cards, and disaster life saving tips to participants. ICE cards were provided to Children and families participating at Navy Kids. ECS participated in the 15th Annual GSAT Assistive Technology Conference; individuals with disabilities, caregivers and their families were provided disaster preparedness information. A brochure on pandemic influenza was created and disseminated at the conference. Two extension professionals attended the annual EDEN meeting in Indiana.

Results

Individuals and families increased their knowledge about disaster preparedness, specifically preparing for natural disasters, and have gained skills in creating a basic home emergency supply kit. Children and other vulnerable populations have ICE cards and know the value of having key contact information to save their lives in potential life threatening situations. Individuals and families can identify critical components of a home emergency plan. Individuals increased their understanding of healthier alternatives to food choices during times of disaster.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
801	Individual and Family Resource Management

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

{No Data Entered}

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

1. Evaluation Studies Planned

- Retrospective (post program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals, group, organizations) and non-participants

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)**Program # 2****1. Name of the Planned Program**

Tropical Food Processing and 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
501	New and Improved Food Processing Technologies	20%			
502	New and Improved Food Products	15%			
503	Quality Maintenance in Storing and Marketing Food Products	5%			
604	Marketing and Distribution Practices	5%			
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	50%			
806	Youth Development	5%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	0.8	0.0	0.5	0.0
Actual	1.7	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
82512	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
40073	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
24713	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

To achieve the goal of increasing locally processed food products in community, we developed recipes for home-processing

tropical fruit jams and jellies using mango and calamansi fruits, provided workshops "Home Food Processing: Jams and Jellies" in the community. We displayed information of preparing jams and jellies and samples in the various community fairs. We studied and developed a method to make noni (*Morinda citrifolia* L.) juice, a tropical dietary supplement, using freezing technology and communicated information with noni farmers and consumers.

To achieve the goal of reducing the risk and the frequency of foodborne illness in community, we provided food safety message in workshops for youth, delivered food safety information in community fairs and displays and regional conferences. To ensure the safety of ethnic food 'kelaguen', we completed the investigation of pathogen survivals and growth in kelaguen and communicated science-based information in the regional conference and events. We printed "Safe Kelaguen" brochure and made copies of "Safe Kelaguen" video and disseminated in the community. Many other food safety information and education materials were disseminated to children, youth, and general consumers.

2. Brief description of the target audience

The outreached target audiences in this program include general consumers, children, youth, local farmers, food entrepreneurs, food safety educators, and employees in food establishments.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	150	500	150	500
Actual	110	600	150	500

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

Patent Applications Submitted

Year: 2009

Plan: 0

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	1	1	
Actual	1	2	2

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of Research Paper

Year	Target	Actual
2009	1	1

Output #2

Output Measure

- # of Research Citations

Year	Target	Actual
2009	2	5

Output #3

Output Measure

- # of extension fact sheets or articles

Year	Target	Actual
2009	2	1

Output #4

Output Measure

- # of workshops

Year	Target	Actual
2009	6	5

Output #5

Output Measure

- # of brochures

Year	Target	Actual
2009	1	1

Output #6

Output Measure

- # of dissemination of information

Year	Target	Actual
2009	400	450

Output #7

Output Measure

- # of one to one intervention

Year	Target	Actual
2009	2	2

Output #8

Output Measure

- # of work with media

Year	Target	Actual
2009	1	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Changes (%) of participants in action of food processing in community
2	Changes (%) of participants in action of food safety in community
3	Changes of condition in food processing: number of value-added products in community markets
4	Changes of condition of food safety: reduction (%) of frequency of foodborne illness in community

Outcome #1

1. Outcome Measures

Changes (%) of participants in action of food processing in community

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	10	30

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Producers increase the varieties of locally produced crops and consumers are interested in products processed by local crops. The cost of imported produces is high and adversely impacts families and consumers on Guam. Use local produces to process value-added food products to benefit consumers and producers is needed.

What has been done

Provide workshops in the community to teaching consumers how to prepare jams and jellies at home using locally-grown tropical fruits such as mango and calamansi.

Results

Participants in the workshops increased knowledge of making jams and jellies and also mastered the skills to make the products.

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies
502	New and Improved Food Products
503	Quality Maintenance in Storing and Marketing Food Products
604	Marketing and Distribution Practices

Outcome #2

1. Outcome Measures

Changes (%) of participants in action of food safety in community

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	20	95

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The estimated foodborne illness occurred on Guam are between 13,000 and 152,000 every year . The economic cost is estimated from \$5.1 to 42.6 million per year. Lack of food safety knowledge and poor food handling practice as well ethnic food 'kelaguen' are attributed to the high frequency of foodborne illness.

What has been done

Food safety workshops were provided in community and schools. Food safety brochures, video, and sanitation materials are disseminated to the target audiences in the community.

Results

Participants in workshops increased knowledge in food safety principles and proper food handling practices. Disseminated educational brochures and video about safety kelaguen preparation helped consumers how to use food safety principles of control pathogens in kelaguen preparation at home.

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Changes of condition in food processing: number of value-added products in community markets

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Changes of condition of food safety: reduction (%) of frequency of foodborne illness in community

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Competing Programmatic Challenges

Brief Explanation

Competing research projects affected the outcomes.

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

1. Evaluation Studies Planned

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

Evaluation Results

We evaluated knowledge and skills of participants through pre- and post-test in workshops

Key Items of Evaluation

V(A). Planned Program (Summary)**Program # 3****1. Name of the Planned Program**

Guam Families, 4-H Youth Development and 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
801	Individual and Family Resource Management	15%			
802	Human Development and Family Well-Being	15%			
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	5%			
806	Youth Development	65%			
Total		100%			

V(C). Planned Program (Inputs)

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	4.0	0.0	0.0	0.0
Actual	3.6	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
150395	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
88174	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
38635	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Life skills lesson and experiential activities were presented and implemented in the schools, 4-H clubs, community organizations, Christmas and Summer Break programs and on the military installations. The lessons and activities delivered included communication and expressive arts, food, nutrition and health programs, natural resources and environmental education, plant, soils, and entomology, science and technology education and economic education and entrepreneurship. A

total of 502 workshops were conducted with 10,805 youths participating, a 49% increase in youth participants from the previous year. There were 437 workshops delivered: 31 in communication and expressive arts; 218 in health programs; 76 in natural resources and environmental education; 36 in plant, soils and entomology; 18 in technology; 11 in entrepreneurship and; 47 in special enrichment programs. Guam 4H Youth Program took a step to emphasis more in Science, Engineering, and Technology. Ten thousand one hundred seventy-nine youths participated in SET program.

2. Brief description of the target audience

Primary target audience includes: children, youth, and families in the community, and schools including military establishments and their families including teachers, educators, and organizations that may request our services in a collaborative manner. Efforts will be made to reach targeted population who are underserved.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	200	500	7000	9000
Actual	300	500	9805	10805

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

Patent Applications Submitted

Year: 2009

Plan: 0

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- (1) # of club members

Year	Target	Actual
2009	300	651

Output #2

Output Measure

- (2) # of volunteer leaders

Year	Target	Actual
2009	15	114

Output #3

Output Measure

- (3) # of workshops

Year	Target	Actual
2009	25	502

Output #4

Output Measure

- (4) # of brochures

Year	Target	Actual
2009	3	5

Output #5

Output Measure

- (5) # of surveys

Year	Target	Actual
2009	1	1

Output #6

Output Measure

- (6) # of media articles and promotions

Year	Target	Actual
2009	4	6

Output #7

Output Measure

- (7) # of focus group

Year	Target	Actual
2009	1	1

Output #8

Output Measure

- (8) # of volunteers trained

Year	Target	Actual
2009	10	25

Output #9

Output Measure

- (9) # of extension staff trained

Year	Target	Actual
2009	15	12

Output #10

Output Measure

- (10)# of collaboration established

Year	Target	Actual
2009	8	14

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	(1) # of 4-H members mastering life skills in the selected targeting life skill curriculum,
2	(2) # of participants gaining life skills knowledge in the workshops they chose and participate in
3	(3) # of volunteers trained in youth development process and leaderships skills,
4	(4) # of school aged children gaining knowledge and experiences in the essential elements in the 4-H curriculum.

Outcome #1**1. Outcome Measures**

(1) # of 4-H members mastering life skills in the selected targeting life skill curriculum,

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	3000	1600

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Guam's youth are engaged in risk behaviors that affect their well-being and the whole community. Consequences lead to serious at-risk behaviors such as alcohol and substance abuse, teen pregnancy, juvenile delinquency, youth crime and diseases. In addition, another critical issue facing Guam's youth is high levels of military deployment. Children with parents in the military face many challenges as their parents move frequently or are developed for long period of time. Research indicates that youth learn from both formal and non-formal forms of education and they learn best through "hands-on" activities and interaction.

What has been done

Four hundred thirty seven life skill workshops were conducted within the Guam public schools, local 4-H clubs, community organizations, summer and Christmas break workshops and three military installations. Workshops consisted of the following life skills: learning to learn, self-responsibility, nurturing relationships, critical thinking, managing feelings, stress management, wise use of resources, accepting differences, sharing, planning/organizing, communication, character, marketable skills, teamwork, cooperation, critical, personal safety, respect, self-esteem, resiliency and healthy life style.

Results

Pre and post tests show that 1,600 participants mastered life skills in targeted life skills curricula.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
806	Youth Development

Outcome #2

1. Outcome Measures

(2) # of participants gaining life skills knowledge in the workshops they chose and participate in

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	3000	9805

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

One major issue Guam's youth face is the lack of youth activities. The absence of youth activities leads to at-risk behaviors such as violence, gangs, destruction of private property, teen pregnancy, dropouts and drug/substance abuse. Research shows that our youth become at-risk due to lack of life skill knowledge. Youth learn from both formal and non-formal forms of education and learn best through "hands-on" activities and interaction. The youth need to be made aware of programs and activities that will offer them the opportunity to gain knowledge and increase life skills in order to make education decisions when faced with situation due to at-risk behavior.

What has been done

UOG Cooperative Extension service continues to partner with schools, local organization and military to provide awareness, education and opportunities through life skills training workshops, experiential activities and demonstration.

Results

A total of 9805 participants taking part in the workshops, activities and demonstrations showed mastery of life skills in targeted areas such as public speaking, visual and performing arts; making healthy choices in food, taking part in more physical fitness activities; becoming more environmentally responsible; learning the interconnectedness of organisms and their environmental; participating in technology education; increasing their knowledge and skills related to economic education and entrepreneurship and; overall being able to demonstrate the use of value skills developed.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
806	Youth Development

Outcome #3**1. Outcome Measures**

(3) # of volunteers trained in youth development process and leaderships skills,

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	15	114

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Volunteers are a vital resource necessary for the success of our youth development programs and play an important role by extending partnerships through community involvement, building collaborators, and delivering the programs to address client needs in the community. The volunteers must be supported with development opportunities, capable management and leadership as well as adequate resources in order for them to increase their own skills and knowledge base, so they can engage and work with the youth and community.

What has been done

Continual training in curricula and developing leadership skills is provided. In addition to the standard program delivery volunteers participating has expanded to program planning, internal consultation, serving on advisory boards, and coaching and supervising.

Results

One hundred fourteen volunteers have received training and orientation in 4-H and youth development programs increasing their knowledge, skills and abilities to be active and engaged volunteers. Ninety have committed and remained active in various roles described above. This is over a 100% increased in committed volunteers from the previous year. The time and service of the volunteers bringing in their own specialties and skills to the 4-H Program is estimated to be equivalent to \$139,000.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
806	Youth Development

Outcome #4**1. Outcome Measures**

(4) # of school aged children gaining knowledge and experiences in the essential elements in the 4-H curriculum.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	3000	9805

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Issues facing Guam's youth today are recurrences of family violence, gang related violence, increasing teen pregnancy, high school drop-out rates as well as suicide, dwindling educational resources, and economic hardships relating to drug and alcohol abuse. Youth must be given the opportunity to gain knowledge and ability through role playing and to identify and deal with at-risk behaviors in a positive manner.

What has been done

Four hundred thirty seven workshops were conducted to aid the youth in increasing their knowledge and skills in leadership, character building, positive attitude change towards at-risk behaviors, health and physical fitness, environmentally responsible behaviors, economic and entrepreneurship education, and science and technology.

Results

9805 Participating youths have changed attitudes and increased awareness in areas such as horticulture, youth finance, nutrition and fitness, and science technology. Through their increased knowledge and skills, youth are better able to engage in the issues at hand that affect them directly or indirectly at home, in school or in the community. Their sense of belonging and ability to make positive life choices, allows them to become civically engage and to act responsibly. The youth assume more self-responsibility and become positive influences in their communities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

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

1. Evaluation Studies Planned

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

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**

Nutrition Education for Guam

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
701	Nutrient Composition of Food	15%			
702	Requirements and Function of Nutrients and Other Food Components	20%			
703	Nutrition Education and Behavior	20%			
704	Nutrition and Hunger in the Population	5%			
724	Healthy Lifestyle	20%			
802	Human Development and Family Well-Being	15%			
805	Community Institutions, Health, and Social Services	5%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	1.4	0.0	0.0	0.0
Actual	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
73117	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
47288	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
21603	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Provided basic nutrition education classes on topics that relate to nutrition and food which; include: Food Safety (Kitchen & Safe Food Handling); Importance of Exercise; Fruits & Vegetables (Vitamins); Shopping Tips; Budgeting; Meal Planning; Reading food

labels and promoting the use of herbs and spices to help reduce the intake of salts, fats and sugars. In addition, the following activities were conducted: nutrition workshops for target populations, developed curriculum for promoting physical activity; education to prevent obesity; localized general nutrition education materials (hand-outs/pamphlets); conducted food demonstrations on local dishes that incorporate healthful modifications; and conducted workshops promoting locally grown fruits and vegetables with healthful recipes.

2. Brief description of the target audience

The target audiences in the program include: School age children (elementary through high school level), Families in public assistance programs, Families with young children, General consumers, Military Families, Elderly, Health educators, School teachers, Local farmers, and Other audiences.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	150	600	2000	1000
Actual	227	925	3984	784

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

Patent Applications Submitted

Year: 2009

Plan: 0

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of workshops

Year	Target	Actual
2009	50	48

Output #2

Output Measure

- # of brochures

Year	Target	Actual
2009	2	1

Output #3

Output Measure

- # of dissemination of research results and new technology and information

Year	Target	Actual
2009	200	180

Output #4

Output Measure

- # of one to one intervention

Year	Target	Actual
2009	50	44

Output #5

Output Measure

- # of focus group

Year	Target	Actual
2009	1	1

Output #6

Output Measure

- # of work with media

Year	Target	Actual
2009	1	3

Output #7

Output Measure

- # of articles in newsletter, magazines, and newspapers

Year	Target	Actual
2009	2	0

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	# of participants exposed to nutrition, exercise, and chronic disease prevention information
2	# of participants gaining an increase in nutrition knowledge and skills, especially for: MyPyramid, food labels, menu planning, smart shopping, healthy food preparation and food safety
3	# of participants gaining an increase in physical activity knowledge and skills, especially as it pertains to maintaining mental and physical well-being, prevention of chronic disease, and improving overall health

Outcome #1**1. Outcome Measures**

of participants exposed to nutrition, exercise, and chronic disease prevention information

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	1000	1055

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

The data from the Guam Department of Public Health and Social Services, Office of Vital Statistics continue to indicate that high numbers of chronic and preventable diseases such as type 2 diabetes, cardiovascular disease and certain types of cancer are the primary causes of death on Guam. We continue to see the need for preventive nutrition educational programs and services as they relate to the promotion of healthy diets and lifestyle habits for the whole community of Guam. Also, a recent needs assessment identified the need to expand the delivery of nutrition and health information for more intervention attempts through our programs.

What has been done

Nutrition education workshops for: 1) families with young children who are in public assistance programs; 2) families who may not receive public assistance but fall into the 'low income' category; 3) youths in Guam schools, including after-school programs and other youth related programs; 4) Nutrition, Fitness, and Fun Summer Camp; and 5) Nutrition education workshops for the elderly in our community. Additional educational efforts include: 1) static nutrition and health displays during island health fairs; 2) monthly (in-store) food demonstrations; and 3) distribution of nutrition education materials which provide information on how to stay healthy and prevent chronic diseases.

Results

A total of 1,055 had an increase in nutrition and health knowledge.

4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
724	Healthy Lifestyle
802	Human Development and Family Well-Being
805	Community Institutions, Health, and Social Services

Outcome #2**1. Outcome Measures**

of participants gaining an increase in nutrition knowledge and skills, especially for: MyPyramid, food labels, menu planning, smart shopping, healthy food preparation and food safety

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	50	44

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

The continuous rise in obesity prevalence and associated complications on Guam is linked to the lack of nutrition and health education. Obviously, there is a need for increased nutrition and health knowledge skills. through nutrition education, the people of Guam would be better informed of the many health benefits of proper nutritional intake of foods and the importance of regular exercise as it too links to good health. Another issue would be the increasing number of people with type 2 diabetes on Guam and the surrounding Pacific islands due to the increasing prevalence of obesity, poor diet, and sedentary lifestyle.

What has been done

Nutrition education workshops for: 1) families with young children who are in public assistance programs; 2) families who may not receive public assistance but fall into the 'low income' category; and 3) youths in Guam schools, including after-school programs and other youth related programs. Additional educational efforts include: 1) static nutrition and health displays during island health fairs; 2) monthly (in-store) food demonstrations; and 3) distribution of nutrition education materials which aid in increasing the percentages of nutrition skills gained through provided educational activities/workshops.

Results

Pre and post tests showed that 85% of participants increased in nutrition skills in one or more lessons.

4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
724	Healthy Lifestyle
802	Human Development and Family Well-Being
805	Community Institutions, Health, and Social Services

Outcome #3**1. Outcome Measures**

of participants gaining an increase in physical activity knowledge and skills, especially as it pertains to maintaining mental and physical well-being, prevention of chronic disease, and improving overall health

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	50	107

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

A sedentary lifestyle and poor food choices are linked to the increased number of Guam residents who suffer from chronic and preventable diseases such as diabetes, cardiovascular diseases, cancer prevention and obesity. Obviously, there is a need for increased physical activity, nutrition and health knowledge and skills. By providing proper health and nutrition education that not only increases knowledge and awareness, but also improves skills associated with increased physical activity and improved lifestyle habits, the number of Guam residents affected by these preventable conditions may be decreased.

What has been done

Nutrition education workshops for: 1) families with young children who are in public assistance programs; 2) families who may not receive public assistance but fall into the 'low income' category; 3) youths in Guam schools, including after-school programs and other youth related programs; 4) Nutrition, Fitness, and Fun Summer Camp; and 5) Nutrition education workshops for the elderly in our community. Additional educational efforts include: 1) static nutrition and health displays during island health fairs; 2) monthly (in-store) food demonstrations; and 3) distribution of nutrition education materials which provide information on how to stay healthy and prevent chronic diseases.

Results

Pre- and post test and follow-up surveys indicate that about 85% of participants in one or more education session have adopted skills and knowledge and are leading healthier lives.

4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
724	Healthy Lifestyle
802	Human Development and Family Well-Being

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (Nutritionist hired at .30 FTE)

Brief Explanation

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Comparisons between program participants (individuals, group, organizations) and non-participants
- Other (Study Assessments)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)**Program # 5****1. Name of the Planned Program**

Animal Systems - Aquaculture Development

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	15%			
111	Conservation and Efficient Use of Water	20%			
133	Pollution Prevention and Mitigation	5%			
301	Reproductive Performance of Animals	10%			
307	Animal Management Systems	25%			
403	Waste Disposal, Recycling, and Reuse	10%			
604	Marketing and Distribution Practices	15%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	1.0	0.0	0.0	0.0
Actual	0.2	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
19688	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
6013	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

The position supporting this plan of work was terminated in December 2008 and there was no activity conducted for this plan of work in 2009. The plan of work could not be canceled from the reporting system because the 2009 Plan of Work during 2008 was already locked.

2. Brief description of the target audience

This program was canceled in 2009

V(E). Planned Program (Outputs)**1. Standard output measures**

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	100	500	60	150
Actual	0	0	0	0

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

Year: 2009

Plan: 0

Actual: 0

Patents listed**3. Publications (Standard General Output Measure)****Number of Peer Reviewed Publications**

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs**Output Target****Output #1****Output Measure**

- number of popular articles in newsletters, magazines and newspapers
Not reporting on this Output for this Annual Report

Output #2**Output Measure**

- number of extension articles
Not reporting on this Output for this Annual Report

Output #3**Output Measure**

- number of workshops
Not reporting on this Output for this Annual Report

Output #4

Output Measure

- number of extension brochures/pamphlets
Not reporting on this Output for this Annual Report

Output #5

Output Measure

- number of requests for research and new technology information
Not reporting on this Output for this Annual Report

Output #6

Output Measure

- number of one to one intervention
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 participants gaining awareness of emerging aquaculture technology
2	Number of participants gaining basic aquaculture knowledge
3	Number of individuals adopting enhancements to existing production systems
4	Number of individuals adopting new aquaculture technology
5	Increased number of producers in aquaculture
6	% substitution of imports
7	20% reduction of imported fishery/aquaculture products by 2011.

Outcome #1

1. Outcome Measures

number of participants gaining awareness of emerging aquaculture technology

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Number of participants gaining basic aquaculture knowledge

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Number of individuals adopting enhancements to existing production systems

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Number of individuals adopting new aquaculture technology

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Increased number of producers in aquaculture

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

% substitution of imports

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

20% reduction of imported fishery/aquaculture products by 2011.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (Retirement of Ext. Aquaculturist and no further funding for this position)

Brief Explanation

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Case Study
- Comparisons between program participants (individuals, group, organizations) and non-participants

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)**Program # 6****1. Name of the Planned Program**

The New Farmer: Agriculture for the Next Generation

V(B). Program Knowledge Area(s)**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%			
104	Protect Soil from Harmful Effects of Natural Elements	10%			
125	Agroforestry	10%			
205	Plant Management Systems	10%			
307	Animal Management Systems	10%			
403	Waste Disposal, Recycling, and Reuse	10%			
601	Economics of Agricultural Production and Farm Management	20%			
608	Community Resource Planning and Development	10%			
806	Youth Development	10%			
	Total	100%			

V(C). Planned Program (Inputs)**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	1.5	0.0	0.0	0.0
Actual	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
111594	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
48491	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
32859	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

There are over 1,090 farmers and potential farmers with agricultural land leases under the Chamorro Land Trust Commission (CLTC). But many (the exact number unknown) are not utilizing the land for agricultural purposes and/or are underutilizing or improperly utilizing the land. A key effort of this program is to develop multi-agency partnerships to assess the CLTC Agricultural lands usage and survey the producers and potential producers on barriers they face in engaging in agricultural production. Then, education and demonstration activities are targeted to their needs. A key accomplishment this year was the signing of a memorandum of agreement (MOA) between CLTC, UOG Cooperative Extension Service and Guam Department of Agriculture, to establish a multiagency team to start the process of site visits of all 1000+ CLTC agricultural leases to assess the level of production and land usage, conduct needs assessments of the lease holders and develop and deliver targeted educational programs for this population. This effort will continue over several years.

The need for outreach programs on best management production and conservation practices is heightened by the dramatic increase in number of new farms on Guam through the Chamorro Land Trust agricultural lease program. Agriculture support agencies on Guam are small and lack the breadth of expertise that would be found in analogous agencies on the mainland. Island-wide the expertise pool is probably adequate to meet the island's needs but is fragmented among several agencies. Consequently, farmers have difficulty accessing the information they need or finding the expertise to explain key concepts to them when they seek advice. Many of these farmers have limited farm experience. The educational needs could be overwhelming for any single agency's staff, but in a coordinated partnership several agencies may effectively address these needs.

Each year planning meetings are held between the cooperating agencies to identify priorities in order to develop Memorandums of Agreement and jointly apply for grant funding to address these priorities. These MOAs and funded grants are planned outputs of this plan of work. These are to enhance local outreach agencies efforts by demonstrating capacity building through training, collaborative planning and presentation of needs.

In cooperation with the PEACESAT communication network and the Land Grant Extension Offices in the Pacific islands, a 4 day train-the-trainer workshops on the curriculum developed under this program was conducted for the College of Micronesia, land grant ag. agents in Guam.

Best management conservation and sustainable agricultural practices were demonstrated on multi-agency demonstration farms, new enterprises and production methods were also demonstrated. Workshops on government incentive programs and funding opportunities for farmers, and workshops for the general public on materials (windbreaks, mulching, backyard aquaculture, agroforestry, composting, etc.) in the New Farmer curriculum.

2. Brief description of the target audience

The primary target audience is the one thousand plus agricultural lease holders of the Chamorro Land Trust Commission (CLTC) agricultural lands programs and the more than 100 existing full and part time commercial and subsistence agricultural producers on Guam. In addition, a secondary target population is the island youth interested in entrepreneurial agricultural activities. Additionally clients of mayors' offices interested in small scale and community agricultural activities are also targeted.

The secondary target audience is the agricultural professional community on Guam. This program is a collaborative effort to build the capacity and enhance the performance of the agricultural professionals in Guam Cooperative Extension, and partner agencies so these agricultural professionals can better identify issues and mobilize resources to assist the agriculture community on Guam.

A third target audience is Extension, education and island Department of agriculture professionals as participant trainers in a train the trainer distance education workshop series on the curriculum materials. These participants will also serve as key contacts in future needs assessments so that the islands needs may be incorporated in our curriculum development efforts.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	110	50	15	0
Actual	261	7500	0	120

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

Patent Applications Submitted

Year: 2009
 Plan: 0
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	1	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- number of popular articles in newsletters, magazines and newspapers

Year	Target	Actual
2009	2	1

Output #2

Output Measure

- number of workshops

Year	Target	Actual
2009	4	5

Output #3

Output Measure

- number of extension fact sheets/brochures/pamphlets

Year	Target	Actual
2009	2	4

Output #4**Output Measure**

- number of one to one intervention

Year	Target	Actual
2009	10	52

Output #5**Output Measure**

- workshop curriculum developed and piloted with agricultural professionals

Year	Target	Actual
2009	4	7

Output #6**Output Measure**

- number of multi-agency agriculture best management practiced demonstrations conducted

Year	Target	Actual
2009	2	7

Output #7**Output Measure**

- Number of Distance Education Workshops conducted on curriculum materials.

Year	Target	Actual
2009	4	0

Output #8**Output Measure**

- # of new Chamorro Land Trust Leasholders participating in workshop and field day activities

Year	Target	Actual
2009	10	16

Output #9**Output Measure**

- # memorandums and understanding and cooperative agreements with partner agencies and organizations

Year	Target	Actual
2009	1	2

Output #10**Output Measure**

- Farmer Group, Non-Profit, and Government Agency need assessment and strategic plan development.

Year	Target	Actual
2009	{No Data Entered}	3

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	# of Chamorro Land Trust Commission lease holders increasing knowledge of sustainable agriculture production technologies, marketing practices and available government services
2	# of agricultural professionals gaining knowledge of sustainable agriculture production technologies, marketing practices, available government programs, and grant opportunities
3	increase of leveraged extension by cooperating agencies participating in the New Farmer Programs.
4	# of farmers adopting recommended demonstrated practices
5	# of participants increasing knowledge of sustainable agriculture production technologies, marketing practices and available government services
6	# cooperating agency and organization personnel adopting and utilizing curriculum materials developed under this POW (both Guam and Distance Education).
7	Resource sharing in Outreach program delivery between UOG Cooperative Extension Service, Guam Department of Agriculture and Chamorro Land Trust Commission.

Outcome #1**1. Outcome Measures**

of Chamorro Land Trust Commission lease holders increasing knowledge of sustainable agriculture production technologies, marketing practices and available government services

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	20	67

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Guam Department of Public Health will no longer issue permits for washout waste management systems on Guam so there needs to be training on alternative waste management practices, like dry litter.

Farmers have limited penetration of produce sales to the number one industry on Guam the tourism industry.

Farmers need to understand the Chefs desires in products and Chefs need to understand seasonality of local produce. Over 1,090 agriculture leases have been issued by the CLTC over the past decade but no one has ever visited and done site inspections to assess needs and compliance with lease terms.

What has been done

Workshop was held on dry litter hog waste management systems 8 CLTC lease holders attended this workshop and learned about this alternative system. A series of hands on direct marketing experiences were conducted for the Farmers Co-op (7 members) and the Micronesian Chefs Association (30 members) the Co-op members learned handling and display methods and the MCA members (24) were shown in two different quarterly events what's fresh now and given local produce to experiment with. Fifty two CLTC agricultural lease sites were visited by the multi-agency team. Needs were assessed, one on one on the CLTC program rules, and production questions fielded.

Results

All activities resulted in knowledge changes and in some case practice changes. The Chamorro Land Trust Commission is now developing an awareness of the problems facing their lease holders and the issues they face in administering these agricultural leases.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
104	Protect Soil from Harmful Effects of Natural Elements
125	Agroforestry
205	Plant Management Systems
307	Animal Management Systems
403	Waste Disposal, Recycling, and Reuse

Outcome #2**1. Outcome Measures**

of agricultural professionals gaining knowledge of sustainable agriculture production technologies, marketing practices, available government programs, and grant opportunities

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	6	21

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Guam Department of Public Health will no longer issue permits for washout waste management systems on Guam so there needs to be training on alternative waste management practices, like dry litter. Ag professionals need to be trained in these systems. Farmers have limited penetration of produce sales to the number one industry on Guam the tourism industry. Farmers need to understand the Chefs desires in products and Chefs need to understand seasonality of local produce. Agriculture professionals need to be trained in these issues.

Over 1,090 agriculture leases have been issued by the CLTC over the past decade but no one has ever visited and done site inspections to assess needs and compliance with lease terms. The agriculture professionals needed training in production monitoring, needs assessments, and rules of the CLTC ag lease in order to inspect sites for compliance and assess client needs.

What has been done

Trainings for CLTC, Guam Department of Agriculture, and UOG CES agriculture professionals covered dry litter waste management, composting, mulching, quarterly whats fresh now, and the rules and regulations of the CLTC ag lease program and production monitoring methods.

Results

A multi-agency production and needs assessment team was formed and trained and is now in the field working on these issues with local farmers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
104	Protect Soil from Harmful Effects of Natural Elements
125	Agroforestry
205	Plant Management Systems
307	Animal Management Systems
403	Waste Disposal, Recycling, and Reuse
601	Economics of Agricultural Production and Farm Management

Outcome #3**1. Outcome Measures**

increase of leveraged extension by cooperating agencies participating in the New Farmer Programs.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	0	3

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

UOG Cooperative Extension Service, Chamorro Land Trust Commission, and Guam Department of Agriculture have signed and are working under a Memorandum of Agreement to form a multi agency team to visit CLTC agricultural lease sites and work on needs assessment, compliance and education and outreach

What has been done

The team has visited 52 farms to assess levels of production, educational needs of the farmers.

Results

Education programs are being designed to address the farmers needs to be implemented in the next reporting cycle. Reports on the issues and problems in terms of the land usage are being developed. The agencies have shared resources to give each agency increased outreach impact.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
104	Protect Soil from Harmful Effects of Natural Elements
125	Agroforestry
205	Plant Management Systems
307	Animal Management Systems
403	Waste Disposal, Recycling, and Reuse
601	Economics of Agricultural Production and Farm Management
608	Community Resource Planning and Development

Outcome #4

1. Outcome Measures

of farmers adopting recommended demonstrated practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	8	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Windbreaks and important soil and water conservation practice are not often adopted because of the production are lost on small farms with very high land values (60,000 to 120,000 and acre). One alternative is to use economically productive plant materials in conservation practices like fruit trees for windbreaks or lemon grass for filter strips.

What has been done

In January a workshop was held on dry litter waste management systems, fruit tree windbreaks and mulching.

Results

Three farmers adopted the practice of using fruit trees as windbreaks.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
104	Protect Soil from Harmful Effects of Natural Elements
125	Agroforestry
205	Plant Management Systems
307	Animal Management Systems
403	Waste Disposal, Recycling, and Reuse
601	Economics of Agricultural Production and Farm Management

Outcome #5**1. Outcome Measures**

of participants increasing knowledge of sustainable agriculture production technologies, marketing practices and available government services

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	60	127

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Twenty farmers learned of drylitter waste management systems, these are important since Guam Environmental Agency and Guam Department of Public Health are no longer approving permits for washout systems.

What has been done

The Micronesian Chefs Association and Guam Hotel and Restaurant Association Food and Beverage Group worked with the 7 members of the Farmers Co-op in two seasonal displays and use of the "What's Fresh Now" market basket.

Results

Over 59 CLTC Ag Lease holders and ag professionals received training on the CLTC and other government programs relating to agricultural production. These two events raised the awareness of over 48 chefs and purchasing managers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
104	Protect Soil from Harmful Effects of Natural Elements
125	Agroforestry
205	Plant Management Systems
307	Animal Management Systems
403	Waste Disposal, Recycling, and Reuse
601	Economics of Agricultural Production and Farm Management
608	Community Resource Planning and Development

Outcome #6

1. Outcome Measures

cooperating agency and organization personnel adopting and utilizing curriculum materials developed under this POW (both Guam and Distance Education).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	4	9

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Agriculture professionals in UOG Cooperative Extension Service, Chamorro Land Trust Commission and Guam Department of Agriculture are developing and using common curriculum on government programs, conservation practices and organic production.

What has been done

Guam Department of Agriculture has utilized many of the materials developed under this program with their Americorps volunteers.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
104	Protect Soil from Harmful Effects of Natural Elements
125	Agroforestry
205	Plant Management Systems
307	Animal Management Systems
403	Waste Disposal, Recycling, and Reuse
601	Economics of Agricultural Production and Farm Management
608	Community Resource Planning and Development
806	Youth Development

Outcome #7**1. Outcome Measures**

Resource sharing in Outreach program delivery between UOG Cooperative Extension Service, Guam Department of Agriculture and Chamorro Land Trust Commission.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

The Chamorro Land Trust Commission has funds for their Agricultural Lease program but lack the expertise to provide adequate outreach and support.

What has been done

Through the MOA they were able to assist Guam Department of Agriculture to repair vehicles, provide support to the Departments fruit tree nursery and in return Guam Department of Agriculture provided an Agricultural Specialist to work on the multi agency team to provide outreach to the CLTC lease holders. The land trust also funded the hiring of an Extension Outreach worker to be part of this team and received support of Extension faculty in outreach program coordination. This leverage all involved agencies efforts.

Results

The MOA is generating a great deal of public support and will probably result in a new 3 yr MOA in the next reporting year.

4. Associated Knowledge Areas

KA Code	Knowledge Area
104	Protect Soil from Harmful Effects of Natural Elements
125	Agroforestry
205	Plant Management Systems
307	Animal Management Systems
403	Waste Disposal, Recycling, and Reuse
601	Economics of Agricultural Production and Farm Management
608	Community Resource Planning and Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Appropriations changes
- Public Policy changes
- Other (change in gov't. admin.)

Brief Explanation

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

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- During (during program)

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Plant Health and Pest Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	5%			
205	Plant Management Systems	10%			
211	Insects, Mites, and Other Arthropods Affecting Plants	10%			
212	Pathogens and Nematodes Affecting Plants	15%			
213	Weeds Affecting Plants	5%			
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	5%			
215	Biological Control of Pests Affecting Plants	10%			
216	Integrated Pest Management Systems	40%			
	Total	100%			

V(C). Planned Program (Inputs)

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	0.0	0.0	0.0
Actual	4.2	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
204204	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
101402	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
57585	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

In 2009, the University of Guam Cooperative Extension Plant Health Group had direct contact with over 4,500 adults and 1,700 youths on plant health related issues. These issues included disease diagnostics, insect identification, weed identification, plant nutrition, invasive species, fertilizing, pesticide application, and Integrated Pest Management (IPM) practices. These direct contacts were made through one-on-one intervention as well as workshops and training classes. The Plant Health Group partnered with experts across the country on Guam's plant health related issues with organizations including the Guam Invasive Species Advisory Committee (GISAC), the Western Plant Diagnostic Network (WPDN), the Western Integrated Pest Management Center (WIPM), and the Pacific Islands Distance Diagnostics and Recommendation System (PIDDRS).

Also in 2009, the Plant Health Group took the lead role in solving our local Ironwood tree problem. Tens of Thousands of these trees are dying across the island. On Guam, these trees are used for windbreaks, mulch, soil erosion prevention, and beautification. Through the awarding of a competitive grant to deal with this problem, The PlantHealth Group sponsored a five day conference in January of 2009. Conference participants included experts from Australia, the Northern Marianas Islands, Georgia, Florida, and Hawaii along with local professionals and producers. This working conference incorporated both field work and group discussion. Field work during the conference consisted of traveling to different areas of the island to survey declining and non-declining trees and to collect samples for laboratory processing and analysis. Field trips were taken each day of the conference, including a trip by all participants to Bernard Watson's farm where over one thousand Ironwood trees are in varying stages of decline. The conference was highlighted here on radio, television, and newspapers.

Another serious plant health problem that the Plant Health Group has taken a lead role in solving is the recent introduction of the Coconut Rhinoceros Beetle. These beetles burrow into coconut trees and can cause the tree to die. Guam's tourism industry and local culture are highly dependent on these trees. Since September of 2007 when the beetle was first discovered here, the Plant Health Group has procured nearly one million dollars in grants to try to eradicate the beetle. This battle is continuing and may continue for years to come.

Ongoing or newly awarded grants with Plant Health Group personnel as Principle Investigators in 2009 included: a USDA WSARE Research and Education grant for \$140,680 - Decline of *Casuarina equisetifolia*: a loss to Pacific island agroforestry; a USDA WSARE Profession Development grant for \$49,962 - Enhancing Guam's agriculture professional's knowledge of ecological disease management through soil nutrients; a T-STAR grant for \$11,400 - Decision support systems to identify and prioritize pest management needs for turf, cucurbits, and potted orchid; an EIPM Coordinator Grant for \$24,000; an RREA grant for \$11,000; a WPDN grant for \$24,000; a USDA Aphis grant for \$25,400 - Surveillance of the Coconut Rhinoceros Beetle on Guam ; a USDA Forest Service grant for \$254,000 - Support for the Guam Coconut Rhinoceros Project; a USDA Aphis grant for \$199,000 - Coconut Rhinoceros Beetle Eradication and Surveillance Project on Guam; a grant from the Guam Legislature for \$500,000 - Support for the Guam Coconut Rhinoceros Beetle Project; a USDA Aphis grant for \$10,000 - Guam Light Brown Apple Moth Detection Survey; a US fish and Wildlife grant for \$35,000 - Entomological Support for Guam National Wildlife Refuge; and a Guam Department of Agriculture grant for \$18,250 - Guam Insect Biodiversity.

2. Brief description of the target audience

The target audience for this program includes local farmers, homeowners, nurseries, landscapers and golf course superintendents and their crews, school children, and government agencies.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	340	440	140	440
Actual	4950	21500	1700	3000

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

Patent Applications Submitted

Year: 2009
 Plan: 0
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	3	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of research papers

Year	Target	Actual
2009	1	8

Output #2

Output Measure

- # of research citations

Year	Target	Actual
2009	5	25

Output #3

Output Measure

- # of extension fact sheets or articles

Year	Target	Actual
2009	3	7

Output #4

Output Measure

- # of workshops/trainings/classes

Year	Target	Actual
2009	10	18

Output #5

Output Measure

- # of brochures

Year	Target	Actual
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2009 4 4

Output #6

Output Measure

- # of research or new technology reports

Year	Target	Actual
2009	3	7

Output #7

Output Measure

- # of one-on-one interventions

Year	Target	Actual
2009	180	4300

Output #8

Output Measure

- # of surveys

Year	Target	Actual
2009	2	8

Output #9

Output Measure

- # of focus groups

Year	Target	Actual
2009	1	1

Output #10

Output Measure

- # of news media activities (TV and radio)

Year	Target	Actual
2009	1	15

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	% of participants gaining skills in identification of insects and related pests
2	% of participants gaining skills in identification of plant diseases
3	% of participants gaining skills in identification of weeds
4	% of participants gaining knowledge about pesticides and their application
5	% of participants reducing indiscriminate use of chemical pesticides
6	% of participants adopting some established IPM practices

Outcome #1**1. Outcome Measures**

% of participants gaining skills in identification of insects and related pests

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	85	95

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Local farmers, homeowners, nurseries, landscapers and golf course superintendents and their crews, students, teachers, government agencies and the general public. Identification is essential in determining the difference between beneficial insects and insect pests, and to insure that proper management practices for IPM and pesticide application are employed. These practices lead to improved plant health and crop yield, and reduce negative impacts on human and wildlife health and the environment.

What has been done

PSEP/PAT training workshops were held for: Turf and Ornamentals (#4); Industrial, Structural and Health related Pest Control (#5); and Commercial and Private - Agricultural Plants (8a). Also, a NPDN training workshop for identifying invasive insect, weed, and plant disease pests was held.

Results

Ninety-five percent of participants passed EPA licensing tests, which required the ability to identify insects and related pests, following PSEP/PAT training workshops for: Turf and Ornamentals (#4); Industrial, Structural and Health related Pest Control (#5); and Commercial and Private - Agricultural Plants (8a). Also, Ninety-five of participants passed the NPDN training workshop for identifying invasive insect, weed, and plant disease pests. These participants received certification as First Detectors and are on an emergency notification list when new invasive pests are discovered on Guam.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
216	Integrated Pest Management Systems

Outcome #2

1. Outcome Measures

% of participants gaining skills in identification of plant diseases

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	85	95

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Local farmers, homeowners, nurseries, landscapers and golf course superintendents and their crews, teachers, students, government agencies and the general public. Plant disease identification of biotic and abiotic caused diseases are essential to insure that proper management practices for IPM and pesticide application are employed. These practices lead to improved plant health and crop yield, and reduce negative impacts on human and wildlife health and the environment.

What has been done

An NPDP training workshop for to identifying invasive insect, weed, and plant disease pests was held.

Results

Ninety-five of participants passed the NPDP training workshop for identifying invasive insect, weed, and plant disease pests. These participants received certification as First Detectors and are on an emergency notification list when new invasive pests are discovered on Guam.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
212	Pathogens and Nematodes Affecting Plants
216	Integrated Pest Management Systems

Outcome #3

1. Outcome Measures

% of participants gaining skills in identification of weeds

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	85	95

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Local farmers, homeowners, nurseries, landscapers and golf course superintendents and their crews, teachers, students, government agencies and the general public. Identification of specific weeds is essential to insure that proper management practices for IPM and pesticide application are employed. These practices lead to improved plant health and crop yield, and reduce negative impacts on human and wildlife health and the environment.

What has been done

An NPDP training workshop for to identifying invasive insect, weed, and plant disease pests was held.

Results

Ninety-five of participants passed the NPDP training workshop for identifying invasive insect, weed, and plant disease pests. These participants received certification as First Detectors and are on an emergency notification list when new invasive pests are discovered on Guam.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #4

1. Outcome Measures

% of participants gaining knowledge about pesticides and their application

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	85	60

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Local farmers, homeowners, nurseries, landscapers and golf course superintendents and their crews, teachers, students, government agencies and the general public. Knowledge of pesticides and their application is crucial for the health and safety of the applicator, consumers of produce, the health of humans and wildlife, and the environment.

What has been done

The PSEP/PAT Basic Core training workshop was held twice in 2009. Training in pesticides and their application were included in the workshop.

Results

Sixty percent of participants passed the Basic Core test following training in pesticide use and application.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
216	Integrated Pest Management Systems

Outcome #5

1. Outcome Measures

% of participants reducing indiscriminate use of chemical pesticides

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	60	60

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Local farmers, homeowners, nurseries, landscapers and golf course superintendents and their crews, teachers, students, government agencies and the general public. Correct application in this area leads to improved plant health and crop yield, savings on pesticide purchases, and reduces negative impacts on human and wildlife health and the environment.

What has been done

PSEP/PAT Basic Core training workshop was held twice in 2009. Training in the indiscriminate use of chemical pesticides was included in the training workshop.

Results

Sixty percent of participants passed the Basic Core test following training in indiscriminate use of chemical pesticides.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems

Outcome #6

1. Outcome Measures

% of participants adopting some established IPM practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	60	60

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Local farmers, homeowners, nurseries, landscapers and golf course superintendents and their crews, teachers, students, government agencies and the general public. Correct application of IPM practices leads to improved plant health and crop yield, and reduces negative impacts on human and wildlife health and the environment.

What has been done

The PSEP/PAT Basic Core training workshops was held twice in 2009. Training in IPM practices was included in the workshop.

Results

Sixty percent of participants passed the Basic Core test following training in IPM practices that was included in the workshop.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
215	Biological Control of Pests 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
- Competing Public priorities

Brief Explanation

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

1. Evaluation Studies Planned

- Before-After (before and after program)
- Comparisons between program participants (individuals, group, organizations) and non-participants

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)**Program # 8****1. Name of the Planned Program**

Sustainability of Small Scale Swine and Poultry Farms on Guam

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
302	Nutrient Utilization in Animals	15%			
307	Animal Management Systems	35%			
601	Economics of Agricultural Production and Farm Management	10%			
703	Nutrition Education and Behavior	15%			
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	10%			
806	Youth Development	15%			
Total		100%			

V(C). Planned Program (Inputs)

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

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	1.4	0.0	0.0	0.0
Actual	1.7	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
99586	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
40073	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
30370	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

1. A partnership with the Department of Agriculture (service support) and the Guam Cooperative Extension Service (education and outreach) to operate a small-scale livestock and poultry demonstration facility.

2. Conduct workshops and training to local and regional producers at the facility

3. Deliver services and products (Department of Agriculture) and educational and technical support (Guam Cooperative Extension Service) to local and regional producers
4. Conduct applied research and field experiments at the facility and on farmers farms to conduct participatory and demonstrations
5. Conduct field tours to educate students, 4-H club members and Military Kids through tours of the facility

2. Brief description of the target audience

Primary local clients will include former, existing and potential new animal producers (swine and layer) both small-scale and subsistence level. On Guam over the past decade, 1,000+ new agriculture land leases have been signed by the Chamorro Land Trust. Many of the producers possess limited resources and are in desperate need of education and technical support programs.

Second target groups are the island's youth particularly youth at risk and military kids. Life skills program by 4-H that relates to animals care and management will also be conducted at the demonstration site and the animals will be displayed at various schools during schools' celebration of Chamorro Week and fairs. The 4-H military Kids program will also utilize the demonstration farm for hands-on learning on animal care, and integration with gardening..

A third target group is the local and regional agricultural professionals. Regional workshops related to animal production will be conducted at the demonstration farm. Extension agents and local and regional professionals from the different Land Grant Institutions from Micronesia and Northern Marianas will participate in activities at the site. Guam will continue to be the source of swine breeders and replacement chicks for Marianas and Micronesia.

A fourth audience is University agricultural students. The demonstration farm will be utilized as laboratory classroom for students enrolled in agriculture courses (Introduction to Agriculture and Introduction to Animal Science) at the University of Guam.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	90	200	230	500
Actual	60	150	200	300

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

Patent Applications Submitted

Year: 2009
 Plan: 0
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of workshops

Year	Target	Actual
2009	4	8

Output #2

Output Measure

- # of extension publications

Year	Target	Actual
2009	2	1

Output #3

Output Measure

- # of field trips

Year	Target	Actual
2009	4	5

Output #4

Output Measure

- # of applied research conducted in demonstration site

Year	Target	Actual
2009	2	4

Output #5

Output Measure

- # of visitors

Year	Target	Actual
2009	150	100

Output #6

Output Measure

- # of one to one contacts

Year	Target	Actual
2009	100	70

Output #7

Output Measure

- # of request for animal displays

Year	Target	Actual
2009	4	7

Output #8

Output Measure

- # of 4-H / Military Kids programs conducted at site
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	# of producers increasing in knowledge and husbandry skills on an integrated to approach to animal and plant farm operations (short term)
2	# of producers adopting demonstrated practices
3	# of producers practicing regular replacements of broodstocks (medium term)
4	# of producers decreasing in feeding imported commercial feeds (medium term)
5	% increase in sustainable small-scale farms (long term)

Outcome #1

1. Outcome Measures

of producers increasing in knowledge and husbandry skills on an integrated to approach to animal and plant farm operations (short term)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	45	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Commercial feeds are very expensive on Guam. By the time the imported feed supplies arrived on island, the quality is already very low, infested with bugs and sometimes moldy. Local feed materials are available and need to have a demonstration and conduct feeding trials.

What has been done

1. Regional workshops on replacing feed imports with local feed resources
2. Feed trials conducted on farm with pigs
3. Local processed feed materials were analyzed for nutrient contents. Assist producers in selection of local feed materials to use.

Results

100 producers increased knowledge of local feed materials can be processed to look like commercial feeds. Feeding trials proved that local feed materials can replace feed imports.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
307	Animal Management Systems
601	Economics of Agricultural Production and Farm Management
703	Nutrition Education and Behavior
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
806	Youth Development

Outcome #2

1. Outcome Measures

of producers adopting demonstrated practices

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

of producers practicing regular replacements of broodstocks (medium term)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	35	25

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Purchase from off-island broodstocks remained very expensive for Guam producers. The recent incidences of poultry disease in the US also made it more difficult to get proper health certificates for importing to Guam

What has been done

The poultry breeders (chickens and ducks) were kept into production of hatching eggs. Local hog broodstocks were also bred for piglet production.

Results

120 ducklings were shipped to Rota island. Piglets were purchased by local raisers and 4 breeder piglets were shipped to Yap. Local poultry producers and hobbyists continue to purchase day-old chicks to grower size poultry for their replacement.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #4

1. Outcome Measures

of producers decreasing in feeding imported commercial feeds (medium term)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	40	30

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Producers are hesitant to maximize use of local feed materials because of the absence of the latest laboratory analysis of nutrient contents and a demonstration or feeding trial of their feed use. There were no recent studies on how to process and evaluate the locally available feed materials fro livestock.

What has been done

Local feed materials such as breadfruit, taro, fish-by-products, most commonly used vegetations were processed through use of small equipment, drying or natural means such as fermentation. These feed materials were placed in a feed grinder or shredder.Processed materials sent to a feed laboratory for analysis.

Results

A table of nutrient analysis for 18 local feed ingredients can now be use to formulate feeds. Knowing the basic nutrient contents gives assurance and confidence to the producer use local feeds. Laboratory analysis also revealed that some common traditional feed materials such as banana trunks are very poor in nutrients.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
307	Animal Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #5

1. Outcome Measures

% increase in sustainable small-scale farms (long term)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	10	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Small-scale or backyard farms on livestock have always been the major source of fresh meat and eggs on island. Small-scale farm operators derive income from this activity and has also cultural and traditional value to them. Though these producers face a lot of challenges in their operation, the basic needs of replacement stocks and lowering cost of production has to be addressed.

What has been done

For the sustainability of replacement stocks, three varieties of poultry breeders were maintained for production of fertile eggs at the agriculture station. After each incubation, day old chicks were sold to farmers. Three sows also produced litters which were also sold to local famers and Yap State Agriculture Agency.

Results

The continuous demand of poultry and swine broodstocks for replacement from producers is a sign that these small farms will continue to exist. The results of the feeding trials and nutrient analysis will assist the producers in maximizing the use of local feeds in their operations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
307	Animal Management Systems
601	Economics of Agricultural Production and Farm Management
703	Nutrition Education and Behavior
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations
- Other (Change in government leaders)

Brief Explanation

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

1. Evaluation Studies Planned

- After Only (post program)
- Before-After (before and after program)
- During (during program)
- Comparisons between program participants (individuals, group, organizations) and non-participants

Evaluation Results

Key Items of Evaluation

V(A). Planned Program (Summary)**Program # 9****1. Name of the Planned Program**

Our Environment and Home & Urban Landscapes

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	10%			
111	Conservation and Efficient Use of Water	20%			
112	Watershed Protection and Management	15%			
123	Management and Sustainability of Forest Resources	5%			
133	Pollution Prevention and Mitigation	10%			
135	Aquatic and Terrestrial Wildlife	15%			
216	Integrated Pest Management Systems	5%			
403	Waste Disposal, Recycling, and Reuse	5%			
605	Natural Resource and Environmental Economics	15%			
	Total	100%			

V(C). Planned Program (Inputs)**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2009	Extension		Research	
	1862	1890	1862	1890
Plan	1.5	0.0	0.0	0.0
Actual	1.0	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
46489	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
24440	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
11287	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The extension publications and other materials that have been developed on sustainability and resource conservation practices for Guam's villages, schools and yards are being used by UOG 4-H in their outreach programs with the schools. In order to expand the target population on Guam to promote sustainability and raise awareness regarding watershed protection, partnerships have been entered into with Government of Guam agencies such as Guam Coastal Management Program and Department of Agriculture, Fisheries Division, and mayors' offices. Publications and other materials have been developed and workshops have been conducted with the pilot village communities of Asan and Piti. Since many Guam residents have little or no understanding of what a watershed is, the workshops focused on watershed education, the impacts of erosion on rivers, streams and coral reefs, and practices that could be employed by residents in their homes and yards to promote stormwater management, rainfall catchment, erosion control and soil enhancement. This program is encompassed in the Guam Yard Manual, which includes extension publications on the above-mentioned items as well as fruit tree production and management, windbreaks, composting, rain gardens and recycling. The program began by obtaining stakeholder input initially from village mayors and then from the residents attending the workshops regarding the issues that they felt needed to be addressed. This pilot program is now shifting towards developing environmentally sensitive community and backyard gardens with the intent of addressing food security issues. Individuals who have been trained regarding the various watershed protection and conservation practices will continue to train future participants in appropriate backyard and community gardening practices.

2. Brief description of the target audience

The target audience is village residents and predominantly homeowners. Many are sincerely concerned about the environment but lack the knowledge and information regarding watersheds to properly protect them. When participants realize that they can have an impact on watershed protection by employing various conservation practices in their own yards, they are more than willing to implement them with assistance from the program coordinators.

V(E). Planned Program (Outputs)

1. Standard output measures

2009	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	40	1000	30	500
Actual	40	75	0	0

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

Patent Applications Submitted

Year: 2009
 Plan: 0
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2009	Extension	Research	Total
Plan	2	0	
Actual	2	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of extension articles

Year	Target	Actual
2009	2	0

Output #2

Output Measure

- Number of workshops

Year	Target	Actual
2009	4	14

Output #3

Output Measure

- Number of brochures

Year	Target	Actual
2009	1	4

Output #4

Output Measure

- Number of requests for research results and new technology and information

Year	Target	Actual
2009	2	3

Output #5

Output Measure

- Number of one to one intervention

Year	Target	Actual
2009	6	0

Output #6

Output Measure

- Number of popular articles

Year	Target	Actual
2009	2	0

Output #7

Output Measure

- Number of Distance Education Workshops for the Pacific Islands.

Year	Target	Actual
2009	4	0

Output #8

Output Measure

- Community Environmental Workdays: Battery/waste oil collection; Masso River Cleanup; International Coastal Cleanup; Masso Valley tree planting

Year	Target	Actual
2009	{No Data Entered}	4

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of participants gaining awareness of environmental issues
2	Number of Government professionals trained in environmental issues and possible solutions and practical applications.
3	Number of schools to introduce an environmental curriculum to their students either as class supplement or through after school activities or field trips.
4	Number of trainers trained in the use of new curriculum modules
5	Number of train the trainer participants utilizing curriculum in trainings (both on Guam and in the Pacific Islands).

Outcome #1

1. Outcome Measures

Number of participants gaining awareness of environmental issues

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	200	127

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
133	Pollution Prevention and Mitigation
216	Integrated Pest Management Systems
403	Waste Disposal, Recycling, and Reuse
605	Natural Resource and Environmental Economics

Outcome #2

1. Outcome Measures

Number of Government professionals trained in environmental issues and possible solutions and practical applications.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	5	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
104	Protect Soil from Harmful Effects of Natural Elements
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
133	Pollution Prevention and Mitigation
135	Aquatic and Terrestrial Wildlife
216	Integrated Pest Management Systems
403	Waste Disposal, Recycling, and Reuse
605	Natural Resource and Environmental Economics

Outcome #3

1. Outcome Measures

Number of schools to introduce an environmental curriculum to their students either as class supplement or through after school activities or field trips.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
------	---------------------	--------

2009

4

3

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
123	Management and Sustainability of Forest Resources
133	Pollution Prevention and Mitigation
135	Aquatic and Terrestrial Wildlife
216	Integrated Pest Management Systems
403	Waste Disposal, Recycling, and Reuse
605	Natural Resource and Environmental Economics

Outcome #4

1. Outcome Measures

Number of trainers trained in the use of new curriculum modules

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	5	3

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
123	Management and Sustainability of Forest Resources
133	Pollution Prevention and Mitigation
135	Aquatic and Terrestrial Wildlife
216	Integrated Pest Management Systems
403	Waste Disposal, Recycling, and Reuse
605	Natural Resource and Environmental Economics

Outcome #5

1. Outcome Measures

Number of train the trainer participants utilizing curriculum in trainings (both on Guam and in the Pacific Islands).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2009	4	3

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
123	Management and Sustainability of Forest Resources
133	Pollution Prevention and Mitigation
135	Aquatic and Terrestrial Wildlife
216	Integrated Pest Management Systems
403	Waste Disposal, Recycling, and Reuse

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

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

1. Evaluation Studies Planned

- During (during program)

Evaluation Results

Key Items of Evaluation