

2012 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 innovative community programs to foster positive change. As the University of Guam's primary public service-oriented unit, Extension actively collaborates 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 to better serve the public interest.

Our planned programs are concentrated in two unit areas: Agriculture and Natural Resources (ANR), and Communities, Youth, Families, Food and Nutrition (CYFFN). 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 goals of ANR are carried out through its planned programs designed by ANR faculty to address issues faced by the community as well as other individual/community educational and informational needs. The 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. These two units achieve these goals through planned programs in Food Safety, Childhood Obesity, Global Food Security and Hunger (Plant Health and Pest Management, Community Development, New Farmer Agriculture for the Next Generation, Small Scale Swine and Poultry Farms), and 4-H and Communities.

In 2012, UOG-CES Plant Health and Pest Management (PHPM) group performed educational outreach to the public sector (local farmers, homeowners, and students), private sector (crews and managers of plant nurseries, landscape companies, and golf courses), and government agencies (Department of Agriculture, EPA, and Parks and Recreation) by providing space, equipment, and expertise for publications, courses and workshops. The group provided advice and instruction through publications, trainings, workshops, brochures, fact sheets, focus groups, television, radio, and one-on-one interventions on various subjects such as pesticide application, Integrated Pest Management (IPM) strategies, plant propagation, insect identification, weed identification, plant disease identification, soil nutrition and fertilizers, invasive species, and grafting. The group also provided plant disease diagnostics and insect identification for the island through the Cooperative Extension Service's Plant Health Clinic (plant disease and entomology laboratories).

The PHPM group continued its research and outreach education on Guam's declining (dying)

Ironwood trees (*Casuarina equisetifolia*). This endeavor has been accomplished through a grant from the Western Sustainable Agriculture Research and Education (WSARE) program. UOG conducted comprehensive three-day workshop focused on tree care. Individuals attending this workshop were from forestry, landscaping companies, golf courses, hotels, and various local government agencies. Another workshop with the same topic was held for the general public on the basic tree care.

Members of the PHPM group are working with UOG biologists and government agencies such as the Invasive Species Council and the Guam Biosecurity Council to minimize damage to Guam's agriculture and natural ecosystems caused by invasive species. Recent invasive species include the little red fire ant, which delivers painful stings to humans and other animals and a new tomato virus. In support of the Environmental Impact Statement addressing the relocation of marines to Guam and the CNMI, the U.S. Department of Defense (DOD) has provided funding to the PHPM group through the Micronesia Biosecurity Plan (MBP) to proactively address terrestrial and marine invasive species risks to Micronesia. This unprecedented effort will help address both invasive species threats to the Military mission and invasive species concerns raised by the Micronesian Chief Executives and federal and regional partners.

Our 4-H and Communities program conducted workshops using, among other locally adapted curricula, the Experiential Learning Model to promote life skills. UOG-CES planned, organized and facilitated and conducted activities that reached 3,247 youth through camps, school enrichment youth activities, after school programs, project and curricula. Youth were exposed to topics in consumer family sciences, biological sciences, technology and engineering, physical science, environmental education/earth science, and agriculture in the classroom. Youth increased their understanding, skills and knowledge in essential elements in the sense of belonging and sense of safety, self-confidence and self-esteem, literacy, communication, problem solving, volunteerism and community service for youth, interaction and relationships with caring adults and peer groups, leadership development and civic engagement.

The Food Safety program provided workshops in safe/proper food handling and processing, and demonstrated food safety practices and processing value-added food products at community fairs as well as disseminated research-based information on food safety and food processing. The program also determined biological properties of tropical plants, fruits and vegetables for human health benefits, and provided one-to-one consultation to residents of these health benefits so as to enhance their processing and marketing of safe and wholesome value-added food products.

This reporting period, the Child Obesity: Nutrition Education Program for Guam provided basic nutrition education classes on topics that related to nutrition and food. The program developed culturally relevant curriculum for promoting physical activity and education to prevent obesity. We localized general nutrition education materials (via brochures/pamphlets) and developed recipe/meal plan book that incorporated healthful modifications of local recipes. Partnerships were established and maintained with local farmers to promote locally grown fruits and vegetables as healthy accessible food sources. Along with basic nutrition education classes this program developed and disseminated nutrition education for chronic disease prevention along with facts sheets highlighting the top chronic preventable diseases on Guam.

In the current program year, the Global Food Security and Hunger - The New Farmer: Agriculture for the Next Generations unit promoted support for home and community grown food as alternatives to store bought food through home and community gardening programs is high, thus increasing local food diversity and self-reliance needed for true island food security. In the current program year UOG engaged the support of the Micronesian Chefs Association to promote local produce through many public venues as viable import substitutes. To increase the skills of the islands agricultural professional, home and community gardening and building farmer chef linkages to promote local produce topical train the trainer workshops were held. These workshops and curriculum further expands the local New Farmer curriculum

while keeping a significant focus on Organic Agriculture and soil and water conservation within the curriculum.

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 engaging university faculty and outside partners in the identification of critical issues and priorities for research and education. We conduct integrated research and education programs as sustained efforts to address critical issues, resulting in tangible outcomes and disseminated research-based knowledge, ideas, information and techniques. 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 our overall goals.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	22.0	0.0	0.0	0.0
Actual	0.0	0.0	0.0	0.0

II. Merit Review Process

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

- Internal University Panel
- External Non-University Panel

2. Brief Explanation

The stakeholders input provide the 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 of the general public
- Survey specifically with non-traditional groups

Brief explanation.

To ensure that UOG-CES is responsive to the needs of the community and to meeting our mission of delivering science-based knowledge to communities, each program unit overseeing the planned programs conduct regular informal and formal stakeholder input activities. For this 2012 reporting year Multi-agency participation was utilized in the generation of outreach publications on the demonstrated conservation and production practices. Two advisory meetings were held between cooperating agencies and nonprofit organizations (NGO's) to identify priorities in outreach program delivery. Additionally, these meetings also prioritized areas to jointly apply for grant funding to address these issues particularly in the areas of soil and water conservation, organic agriculture, and community gardens. Best management conservation and sustainable agricultural practices are being demonstrated on the UOG campus and on multi-agency demonstration farms, new enterprises (tropical fruits) and production methods (sheet mulching), and other organic practices are being demonstrated.

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 issues, 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. As well, UOG-CES and their partners collectively conduct focus group sessions to identify emerging needs of stakeholders.

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

None at this 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
993766	0	0	0

2. Totaled Actual dollars from Planned Programs Inputs				
Extension			Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	993766	0	0	0
Actual Matching	500000	0	0	0
Actual All Other	347328	0	0	0
Total Actual Expended	1841094	0	0	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	110472	0	0	0

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Community Development
2	4-H Youth and Development
3	Childhood Obesity
4	Food Safety
5	Plant Health and Pest Management
6	Global Food Security and Hunger - Sustainability of Small Scale Swine and Poultry Farms on
7	Global Food Security and Hunger
8	Global Food Security and Hunger - Home and Urban Landscapes
9	Climate Change
10	Sustainable Energy

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Community Development

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	30%			
801	Individual and Family Resource Management	25%			
802	Human Development and Family Well-Being	25%			
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	10%			
805	Community Institutions, Health, and Social Services	10%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	5.0	0.0	0.0	0.0
Actual Paid Professional	3.0	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
189409	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
71429	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
63696	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

In 2012, UOG-CES Community Development program increased its efforts in fostering more inclusive decision-making and action (teaching policy leaders how to interpret and apply economic data for planning and decisions), building capacity in leadership and strategic planning, and developing youth entrepreneurs.

Our youth entrepreneurial program delivered 30 planned hours of programming in entrepreneurial concepts and skills and exploratory activities to 45 teen participants using localized curriculum and activities to capitalize on cultural assets and meet the demands of their local economies.

We provided consultation in focus group design and recruitment planning for the Guam Workforce Investment Board 2012-2016 State Plan; facilitated Strategic Planning and Needs Assessment for Gef Pago, a cultural non-government organization; presented the proposed Regional Micronesian Worker Workforce Strategy at the 18th Micronesian Chief Executives' Summit on behalf of the Regional Workforce Development Council (RWDC); provided consultation on Guam's Vocational Rehabilitation State Plan and assisted in the development of the Guam State Rehabilitation Council (SRC) needs assessment; conducted and lead the survey on Micronesian Migrants on Guam and completed its final report; crafted and designed the Guam Department of Education School Lunch Breakfast Meal Study Proposal for conducting a cost study assessment for Free and Reduced Lunch Program.

2. Brief description of the target audience

Target audience composition include continuing collaboration with local government agencies, policy-makers, government boards, and councils; non-governmental organizations, youth ages 14-17. Other target audiences include industry collaboration, community groups and the general public.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	10	50	57	0

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

Year: 2012
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Output #2

Output Measure

- number of workshops

Year	Actual
2012	7

Output #3

Output Measure

- number of brochures

Year	Actual
2012	1

Output #4

Output Measure

- number of disseminated research results, new technology and information

Year	Actual
2012	1

Output #5

Output Measure

- number of surveys

Year	Actual
2012	1

Output #6

Output Measure

- number of focus groups conducted

Year	Actual
2012	2

Output #7

Output Measure

- number of popular articles in newsletters, magazines and newspapers

Year	Actual
2012	1

Output #8

Output Measure

- number of one to one assistance

Year	Actual
2012	15

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	number of youth increasing knowledge and skills in youth entrepreneurship
2	number of individuals increasing awareness and understanding of disaster preparedness.
3	Number of community institutions increasing awareness and understanding of community food security issues, trends, and processes.
4	number of individuals increasing awareness and understanding of community food security issues, trends, and processes.
5	number of individuals adopting community food security practices.
6	number of individuals increasing understanding of decision making process
7	number of individuals increasing knowledge of personal and interpersonal leadership skills
8	Number of organizations adopting group and organizational leadership skills.
9	number of individuals increasing knowledge, understanding and skills in program development.
10	Number of organizations adopting program development skills.
11	Number of organizations determining and developing appropriate and effective strategies for public decision making
12	Number of organizations crafting, evaluating, and implementing alternative solutions to address public issues
13	Number of organizations building skills and identifying opportunities to enhance effective participation in public decision making processes

Outcome #1

1. Outcome Measures

number of youth increasing knowledge and skills in youth entrepreneurship

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	45

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #2

1. Outcome Measures

number of individuals increasing awareness and understanding of disaster preparedness.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Number of community institutions increasing awareness and understanding of community food security issues, trends, and processes.

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

number of individuals increasing awareness and understanding of community food security issues, trends, and processes.

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

number of individuals adopting community food security practices.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

number of individuals increasing understanding of decision making process

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	30

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Individuals familiar with strategic planning processes and needs assessments.

Results

4. Associated Knowledge Areas

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

Outcome #7

1. Outcome Measures

number of individuals increasing knowledge of personal and interpersonal leadership skills

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	45

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

- 802 Human Development and Family Well-Being
- 803 Sociological and Technological Change Affecting Individuals, Families, and Communities

Outcome #8

1. Outcome Measures

Number of organizations adopting group and organizational leadership skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Strategic planning session

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

Outcome #9

1. Outcome Measures

number of individuals increasing knowledge, understanding and skills in program development.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	27

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

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

Outcome #10

1. Outcome Measures

Number of organizations adopting program development skills.

Not Reporting on this Outcome Measure

Outcome #11

1. Outcome Measures

Number of organizations determining and developing appropriate and effective strategies for public decision making

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Sponsored 2 strategic planning sessions with organizations, 2 needs assessments, SWOT analysis and focus groups.

Results

4. Associated Knowledge Areas

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

Outcome #12

1. Outcome Measures

Number of organizations crafting, evaluating, and implementing alternative solutions to address public issues

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Review of agency state plans and updating annual reports. Improving organizations decision making practices.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

Outcome #13

1. Outcome Measures

Number of organizations building skills and identifying opportunities to enhance effective participation in public decision making processes

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Forty-five students participating in the youth entrepreneur program completed pre and post tests to assess knowledge, skills and abilities in articulation entrepreneurial interests and goal, financial management, completing a business plan on a project that interests them, understanding the components and role of a budget project for proposed

enterprise; and understanding the process (and issues involved) of producing and marketing the chosen.

Students have a developed understanding and mastery of what it means to be an entrepreneurial, identifying their entrepreneurial interests and setting personal Students were able to link their entrepreneurial aspirations to products and services they chose to work on. They used web-development, social networking, spreadsheet, and word processing applications to develop and market their products and/or service.

Community, businesses, and technology are vital to help and support youth entrepreneurs to be creative in identifying entrepreneurial interests. Learning from past years evaluations we have involved more financial collaborators to assist students in exploring financial opportunities to establish and sustain their chosen ventures.

Students have a developed understanding and knowledge of producing and marketing a chosen product. Creative uses of technology and social marketing networks helped to spark creative ways in which students can market their products. Students understand the importance of producing and marketing their product/service and the costs associated as well as the issues and challenges. Continue to use innovative and creative ways to develop and market products.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

4-H Youth and Development

Reporting on this Program

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	25%			
802	Human Development and Family Well-Being	25%			
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	25%			
806	Youth Development	25%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	0.0	0.0	0.0
Actual Paid Professional	2.2	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
143466	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
71428	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
51371	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

In 2012, the UOG-CES 4H Youth Development and Communities program conducted workshops using the Experiential Learning Model to promote life skills. UOG CES planned, organized, facilitated and conducted youth related outreach educational activities that reached 5,625 youth. Activities include 18 workshops with community clubs, 26 workshops with school clubs, 6 workshops with 4H after school clubs with military 4H clubs. We also conducted 16 special interest/short term program, a 3-week day camping program, 18 after-school enrichment programs, 6 individual study/mentoring/family learning program, 2 after school program using 4h curriculum on staff training, and 2 instructional TV/Video/ Web program

Workshop topics included consumer family science, biological sciences, technology and engineering, physical science environmental educational/earth science, and agriculture in the classroom. Participants learned, practiced and mastered life skill activities including: teamwork, managing feelings, healthy lifestyle choices, personal goal setting, resiliency cooperation/collaboration with others, communication and social skills, leadership, wise use of resources, decision making, critical thinking, self-esteem/motivation, marketable skills, responsible citizenship, and learning to learn. The workshops also included STEM activities.

2. Brief description of the target audience

Primary target audience include: children and youth in the community, I public, private and military school as well as their families, teachers, educators, and organizations that requested out service in a collaborative manner. Extension continues its effort to reach the population who are under-served. This year 4H partnered with the Guam Department of Education's Federal Programs providing life skills workshops to student whose language is other than English, students who are primarily from the Federated States of Micronesia. We have established a partnership with JP Torres Alternative School dealing with high-risk students. We collaborated with Department of Youth Affair to initiate programs and life skills to promote career path of clients.

3. How was eXtension used?

eXtension was used as a reference in developing and aligning our outreach program for youth at risk.

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	521	968	5625	6122

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

Patent Applications Submitted

Year: 2012

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- (1) # of club members

Year	Actual
2012	1825

Output #2

Output Measure

- (2) # of volunteer leaders

Year	Actual
2012	130

Output #3

Output Measure

- (3) # of workshops

Year	Actual
2012	100

Output #4

Output Measure

- (4) # of brochures
Not reporting on this Output for this Annual Report

Output #5

Output Measure

- (5) # of surveys

Year	Actual
2012	1

Output #6

Output Measure

- (6) # of media articles and promotions
Not reporting on this Output for this Annual Report

Output #7

Output Measure

- (7) # of focus group
Not reporting on this Output for this Annual Report

Output #8

Output Measure

- (8) # of volunteers trained

Year	Actual
2012	34

Output #9

Output Measure

- (9) # of extension staff trained

Year	Actual
2012	11

Output #10

Output Measure

- (10)# of collaboration established

Year	Actual
2012	17

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	(1) Number of youth through communication and expressive arts programming demonstrate increased self efficacy in public speaking, presentations, visual arts and performing arts
2	(2) Number of youth participants in 4H natural resources and environmental education programs demonstrate environmentally responsible behavior
3	(3) Number of youth participants who study plant, soil and entomology learn the interconnectedness of organisms and their environment
4	(4) Number of youth reporting positive attitude change and/or aspirations about learning and careers in a 4-H project area
5	(5) Number of youth increasing participation in science and technology educational programming/clubs
6	(6) Number of volunteers completing a training program and successfully leading a program, activity, event or club
7	(7) Number of youth indicating increased knowledge/skills related to economic education and/or entrepreneurship
8	(8) Number of youth indicating knowledge and/or skills related to leadership
9	(9) Number of youth reporting positive attitude change and/or aspiration related to volunteering and community service

Outcome #1

1. Outcome Measures

(1) Number of youth through communication and expressive arts programming demonstrate increased self efficacy in public speaking, presentations, visual arts and performing arts

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	2859

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Communication and expressive arts programs promotes effective communication, public speaking, citizenship skills, build leadership and personal development, increases community/volunteer services, and civic engagement. These programs help youth express themselves, increase self-confidence, develop good self-esteem, additionally the programs increase knowledge in critical thinking, decision making, goal setting, and problem solving. These are identified essential skills in youth development as youth prepare to enter into the workforce.

What has been done

One-Hundreth workshops were conducted with the total of 5,625 youth participating in the life skills sessions that increased their knowledge and skills in communication and expressive arts.

Results

2583 participated in civic engagement, 968 learned skills in community/volunteer service, 2685 increased their leadership and personal development skills, 3623 increase their communication skills and participate in expressive arts and STEM.

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) Number of youth participants in 4H natural resources and environmental education programs demonstrate environmentally responsible behavior

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	2524

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

It is essential that youth take part in becoming leaders in our community and environmental issues. Sustainable community depends on our youth partnerships and leadership development. Youth need to understand the linkages between natural resources and environmental education program. By involving youth in ecological projects, they increase their sense of ownership, citizenship, and environmental stewardship.

What has been done

A number of workshops were conducted to increase their knowledge and skills in natural resources and environmental education programs.

Results

2,524 youth participants in the 4-H natural resources and environmental programs increased their knowledge and demonstrated learned skills in environmental education programs including responsible behavior.

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) Number of youth participants who study plant, soil and entomology learn the interconnectedness of organisms and their environment

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	1102

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth who participated in school gardening (Ag. in the Classroom) curriculum developed positive self-esteem, increased nutritional habits, developed leadership skills, increased awareness and appreciation for the nature and the environment, increase a sense of healthy-lifestyles, and increased science skills. Youth gained an understanding of value of food, food processing and preparation as it related to healthy living. Youth outdoor activities increased their physical well-being.

What has been done

Workshops were conducted in the schools and 4-H Clubs that helped increased youths knowledge and understanding of plants, soils, consumer sciences, food processing and preparations. Additionally, youth learned about the science of entomology and how insects play a major role in our environment connectedness.

Results

1,102 youth learned new science skills and increased their knowledge with regard to plan and soils sciences and how the sciences of entomology is interconnected to organisms and environment.

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) Number of youth reporting positive attitude change and/or aspirations about learning and careers in a 4-H project area

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	3134

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

An essential element in youth development is independence. A skill that motivate youth to become critical thinkers, problem solvers, and good decision makers. To achieve these, CES provides opportunities for the youth to engage in learning that motivates them to be masters of the skills and practice learned skill through community services and citizenship activities.

What has been done

A number of workshops were conducted to help youth increase their knowledge and skills in critical thinking, problem solving, and good decision making. Youth reported positive attitude and/or aspirations about learning and career identification in 4-H project area.

Results

3134 youth increased their knowledge and changed their attitudes with regard to career choice and overall outlook of the future.

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 #5

1. Outcome Measures

(5) Number of youth increasing participation in science and technology educational programming/clubs

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	2781

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In partnership with our local education department and 4-H Military project, a demand for science, engineering and technology has been addressed. Resources identification and sharing had equipped our 4-H staff to deliver needed life skills activities that serviced SET programs. Our young people must learn life skills in SET in order to be competitive in job market.

What has been done

Ninety SET workshops were conducted in the GDOE, local 4-H Clubs, community organizations, summer and Christmas break including four with the Military Installation 4-H Clubs.

Results

2781 participants indicated an increased knowledge in basic sciences, engineering and math. Increased skills in measurements, plant identification, rocketry, marines sciences, and boating safety were identified to be activities that were also most enjoyed and learned.

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 #6

1. Outcome Measures

(6) Number of volunteers completing a training program and successfully leading a program, activity, event or club

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	130

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Volunteers are vital resources necessary for the success of our youth development programs. They play a important role in extending partnerships through community involvement, building, collaboration 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 engage and work with the youth and community.

What has been done

130 volunteers received training and orientation in the 4-H Youth Development Program. 4-H 101 training manual was used. The manual is extensive and provides a systematic approach to youth development programming.

Results

4-H Community 4-H Clubs, Special Interest 4-H Clubs, School Based 4-H Clubs, Military 4-H Clubs were organized and Chartered. 4-H office continues to service clubs implementing life skills activities as scheduled. Finally, volunteers have had a major impact in the increase enrollment of 4-H Membership as a whole.

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 #7

1. Outcome Measures

(7) Number of youth indicating increased knowledge/skills related to economic education and/or entrepreneurship

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	1092

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The community is currently facing an economic challenge. Prices for gas, food, shelter, and health care continue to increase. Youth finance and entrepreneurship programs help to promote skills, behavior, knowledge, and attitude for participant to become proactive in their future financial challenges.

What has been done

4-H Staff conducted twelve workshops within Guam public schools, local 4-H Clubs, community organizations and during summers and Christmas break including 2 Military installations. Workshops in budgeting, understanding where money goes, value of money, and simple business plans were conducted.

Results

1092 youth participants increased their knowledge and skills in money (finance) management, and practiced the development of a business plan. Youth indicated having increased their knowledge/skills related to economic education and/or entrepreneurship.

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 #8

1. Outcome Measures

(8) Number of youth indicating knowledge and/or skills related to leadership

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	2124

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Leadership skills are critical in our democratic governance. Youth who serves in leadership roles are potentially the leader of our nation?s future. We must cultivate these skills and increase our potential if we are to become and continue to be a stronger nation. Our future depends on good leaderships with good leadership skills.

What has been done

Partnering with our schools, volunteers, local organizations, and Military partners, 4-H has conducted life skills training using Targeting Life Skills Model and Experiential Learning Model.

Results

2124 youth participated in workshop activities designed to increase skills in leadership that included targeted areas of communication, teamwork, self discipline, self responsibility, decision making, problem solving, concern for others, goal setting, critical thinking, cooperation, conflict resolution, good character and responsible citizenship.

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 #9

1. Outcome Measures

(9) Number of youth reporting positive attitude change and/or aspiration related to volunteering and community service

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	1768

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Volunteering and community service are they key elements to successful youth development programming. Youth need to learn from adults and adults need to learn from youth as we engage in both community betterment and oneself. Successful programs nationwide are based on volunteerism and community service.

What has been done

UOG-CES conducted workshops linking volunteer and community service to sustainable environment, community, individuals, families, and organizations resiliency.

Results

1768 youth and adult volunteers attended and participated in the workshops were able to report an increase in positive attitude regarding caring for the environment and their families. An increase in their generosity performance indicated that they want to share what they have learned (mastered), increase in participatory community service (belonging), while share their capabilities (independence).

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
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

Financial constrains have been most challenging. However, UOG-CES continues its efforts to seek extramural funding sources.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Pre and post evaluation results indicate that youths who participated in 4-H life skills activities demonstrate increased knowledge in subject matter areas, increased awareness of well-being (self esteem and self motivation), increased levels of social skills, increased participation in teamwork, increased interest in STEM topics, and increased levels of critical thinking, problem solving, and decision making skills.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Childhood Obesity

Reporting on this Program

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	10%			
703	Nutrition Education and Behavior	20%			
704	Nutrition and Hunger in the Population	10%			
724	Healthy Lifestyle	25%			
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 FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	2.7	0.0	0.0	0.0
Actual Paid Professional	1.5	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
73471	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
71429	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
32526	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Activities for this program in 2012 included: (1) conducted basic nutrition education classes on topics that relate to nutrition and food which include: 'MyPyramid'; Food Safety (Kitchen & Safe Food Handling); Importance of Exercise; Fruits & Vegetables (Vitamins); Shopping Tips; Budgeting; meal Planning; Reading Food labels; promoting use of herbs and spices to help reduce the intake of salts, fats and sugars; and chronic disease prevention. (2) Conducted nutrition workshops to target population. (3) Developed culturally relevant curriculum for promoting physical activity; education to prevent obesity; localized general nutrition education materials (brochures/pamphlets) and also develop a curriculum on food portion control and over-eating. (4) Developed recipe books that feature favorite local recipes. (5) Created a local recipe book that incorporates healthful modifications of local dishes. (6) Conducted food demonstrations on local dishes that incorporate healthful modifications. (7) Developed booklet and calendar that identifies locally grown fruits and vegetables with high nutritive value and suggest ways to healthful ways to prepare the local produce. (8) Conducted workshops promoting locally grown fruits and vegetables with healthful recipes for both farmers and experienced cooks, and marketing healthful recipes with locally grown produce. (9) Maintained partnerships with local food source businesses to promote a greater variety of healthful foods and education awareness within food source facilities. (10) Developed and disseminated fact sheets of common causes of preventable chronic diseases that are prevalent on Guam and showed how it is related to poor lifestyle choices. (11) Developed and disseminated health and nutrition education curriculum for chronic disease prevention along with educational materials.

2. Brief description of the target audience

The target audiences of the program include: (1) school-aged children (elementary through high school level); (2) families in public assistance programs; (3) families with young children; (4) general consumers; (5) military families; (6) health educators; (7) school teachers; (8) local farmers; (9) working professionals; (10) other groups requesting services.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	104	746	2880	677

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

Year: 2012
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of workshops

Year	Actual
2012	33

Output #2

Output Measure

- # of brochures

Year	Actual
2012	1

Output #3

Output Measure

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

Year	Actual
------	--------

2012 136

Output #4

Output Measure

- # of one to one intervention

Year	Actual
2012	136

Output #5

Output Measure

- # of focus group

Year	Actual
2012	20

Output #6

Output Measure

- # of work with media

Year	Actual
2012	4

Output #7

Output Measure

- # of articles in newsletter, magazines, and newspapers

Year	Actual
2012	5

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	# of participants exposed to nutrition, exercise, and obesity 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
4	# of participants who have been exposed to health and nutrition education for chronic disease prevention

Outcome #1

1. Outcome Measures

of participants exposed to nutrition, exercise, and obesity prevention information

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	2000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The data from the Guam Dept 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 education programs and services as they relate to the promotion of healthy diets and lifestyle habits for the whole community of Guam.

What has been done

Nutrition education workshops for: 1) families with young children 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 education 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 2,000 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	Actual
2012	97

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 and skills. Through nutrition education, the people of Guam would be better informed on the many health benefits of proper nutritional intake of foods and the importance of regular exercise as it too links to good health.

What has been done

Nutrition education workshops for: 1) families with young children 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 education 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-tests showed that 93% 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	Actual
2012	84

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A sedentary lifestyle and poor food choices are linked to the increase number of Guam residents who suffer from chronic and preventable diseases such as obesity, diabetes, cardiovascular diseases, and cancer. 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 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 education 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 93% 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
805	Community Institutions, Health, and Social Services

Outcome #4

1. Outcome Measures

of participants who have been exposed to health and nutrition education for chronic disease prevention

Not Reporting on this Outcome Measure

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 Specialist at 0.30 FTE)

Brief Explanation

The lack of a nutrition specialist seriously affects our ability to increasing impact in chronic disease education.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Food Safety

Reporting on this Program

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 FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	1.0	0.0	0.0	0.0
Actual Paid Professional	1.2	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
89622	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
71427	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
36868	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The activities completed this programming year include: (1) conducted workshops related to food safety and value-added food products in the community; (2) provided technical consultant services about food safety and technology in community; (3) determining the values of tropical and subtropical of plants, fruits and vegetables related to human health benefits and food safety and quality; and (4) disseminated science-based information and technologies to processing and marketing safe and wholesome food products in the community.

2. Brief description of the target audience

The target audiences include food entrepreneurs, food workers, and food-safety educators, farmers, general consumers, youth, and school children.

3. How was eXtension used?

Some of information in eXtension related to food safety and processing was used in our food safety education program.

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	200	2500	50	200

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

Patent Applications Submitted

Year: 2012

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	0	1	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of peer reviewed publications

Year	Actual
2012	2

Output #2

Output Measure

- # of non-peer reviewed publications

Year	Actual
2012	1

Output #3

Output Measure

- # of workshops

Year	Actual
2012	5

Output #4

Output Measure

- # of dissemination of science-based information

Year	Actual
2012	500

Output #5

Output Measure

- # of work with media

Year	Actual
2012	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Changes (%)of particapants in knowledge of food safety and food processing
2	Changes (%) of participants in action of food safety and food processing
3	Numbers of new value-added products, which are safe and wholesome, in the community

Outcome #1

1. Outcome Measures

Changes (%) of participants in knowledge of food safety and food processing

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Lack of knowledge in properly handling foods and processing safe and wholesome food products

What has been done

We provided food safety education, noni juice processing workshops, and stirred soursop probiotic workshops in the community.

Results

Based on the pre- and post-tests during the workshops, the knowledge of participants improved 19.5 (+ or - 11.7)% at the end of the workshops.

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

Outcome #2

1. Outcome Measures

Changes (%) of participants in action of food safety and food processing

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Numbers of new value-added products, which are safe and wholesome, in the community

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Competing Public priorities
- Competing Programmatic Challenges
- Other (Imported food items)

Brief Explanation

Due to high amount of imported food items (90%) in the island of Guam, it is a challenge for farmers and food entrepreneurs to use local products to process and market value-added food products even after increasing knowledge in food processing and safety of local produce.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

We evaluated our extension education in the area of workshop usefulness, providing science-based knowledge, practical information, addressing important issues, effective presentation, workshop organizing, and overall. The evaluation from audiences in workshops showed an average score of 4.7 in workshop usefulness, 4.6 in science-based knowledge, 4.6 in practical information, 4.5 in addressing important issues, 4.3 in effective presentation, 4.5 in workshop organizing, and 4.6 in overall. The evaluation system was based on: "1" = poor; "3" = good; and "5" = excellent.

Key Items of Evaluation

Based on the evaluation, our extension education was useful and practical to audiences. The knowledge that we delivered was science-based and addressed the important issues in the community. Audiences were very satisfied with our extension

education in workshops.

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Plant Health and Pest Management

Reporting on this Program

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 FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	2.5	0.0	0.0	0.0
Actual Paid Professional	3.8	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
274358	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
71429	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
78807	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The University of Guam Cooperative Extension Service's Plant Health and Pest Management (PHPM) group performed educational outreach to the public sector (local farmers, homeowners, and students), private sector (crews and managers of plant nurseries, landscape companies, and golf courses), and government agencies (Department of Agriculture, EPA, and Parks and Recreation) by providing space, equipment, and expertise for publications, courses and workshops. The group gave advice and instruction through publications, trainings, workshops, brochures, fact sheets, focus groups, television, radio, and one-on-one interventions on various subjects: pesticide application, Integrated Pest Management (IPM) strategies, plant propagation, insect identification, weed identification, plant disease identification, soil nutrition and fertilizers, invasive species, and grafting. The group also provided plant disease diagnostics and insect identification for the island through the Cooperative Extension Service's Plant Health Clinic (plant disease and entomology laboratories).

The PHPM group continued its research and outreach education on Guam's declining (dying) Ironwood trees (*Casuarina equisetifolia*). This endeavor has been accomplished through a grant from the Western Sustainable Agriculture Research and Education (WSARE) program. A comprehensive three-day workshop was conducted on tree care. Individuals attending this workshop were from forestry, landscaping companies, golf courses, hotels, and various local government agencies. Each participant received a 77 page manual authored by our group titled "Plant Health Care: Guam's Ironwood and other Trees of the Marianas." A fourth workshop (Plant a Tree: Save an Island) was held for the general public on that Saturday. Participants learn the basics of how to plant and care for trees. At the University of Guam Charter Day in March 2012, over 500 students, teachers, farmers, and the general public were educated on ironwood tree decline (IWTd) and Ironwood tree care using interactive displays.

Members of the PHPM group are working with UOG biologists and government agencies such as the Invasive Species Council and the Guam Biosecurity Council to minimize damage to Guam's agriculture and natural ecosystems caused by invasive species. Recent invasive species include the little red fire ant, which delivers painful stings to humans and other animals and a new tomato virus. In support of the Environmental Impact Statement addressing the relocation of marines to Guam and the CNMI, the U.S. Department of Defense (DOD) has provided funding to the PHPM group through the Micronesia Biosecurity Plan (MBP) to proactively address terrestrial and marine invasive species risks to Micronesia. This unprecedented effort will help address both invasive species threats to the Military mission and invasive species concerns raised by the Micronesian Chief Executives and federal and regional partners. Our group have partnered with the UOG Center for Island Sustainability to help perform a peer review and write an implementation plan for the MBP.

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, teachers, school children, and government agencies

3. How was eXtension used?

eXtension was used to supplement information for workshops.

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	3470	20330	718	3050

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

Patent Applications Submitted

Year: 2012

Actual: 1

Patents listed

Devices and methods for detecting and trapping pests

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	4	5	9

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of research papers

Year	Actual
2012	7

Output #2

Output Measure

- # of research citations

Year	Actual
2012	26

Output #3

Output Measure

- # of extension fact sheets or articles

Year	Actual
2012	9

Output #4

Output Measure

- # of workshops/trainings/classes

Year	Actual
2012	30

Output #5

Output Measure

- # of brochures

Year	Actual
2012	11

Output #6

Output Measure

- # of research or new technology reports

Year	Actual
2012	6

Output #7

Output Measure

- # of one-on-one interventions

Year	Actual
2012	2870

Output #8

Output Measure

- # of surveys

Year	Actual
2012	3

Output #9

Output Measure

- # of focus groups

Year	Actual
2012	1

Output #10

Output Measure

- # of news media activities (TV and radio)

Year	Actual
2012	18

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	Actual
2012	65

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

Pesticide Safety Education Program (PSEP) Basic Core pesticide training workshops were conducted by the CES Plant Health group two times during the year. Identification of insects and related pests were major components of these trainings.

Results

Sixty five percent of participants passed EPA licensing tests for the Basic Core.

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	Actual
2012	65

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

Pesticide Safety Education Program (PSEP) Basic Core pesticide training workshops were conducted by the CES Plant Health group two times during the year. Identification of plant diseases were major components of these trainings.

Results

Sixty five percent of participants passed EPA licensing tests for the Basic Core.

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	Actual
2012	65

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 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

Pesticide Safety Education Program (PSEP) Basic Core pesticide training workshops were conducted by the CES Plant Health group two times during the year. Identification of weed pests were major components of these trainings.

Results

Sixty five percent of participants passed EPA licensing tests for the Basic Core.

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	Actual
2012	65

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

Pesticide Safety Education Program (PSEP) Basic Core pesticide training workshops were conducted by the CES Plant Health group two times during the year. Pesticides and pesticide application were major components of these trainings.

Results

Sixty five percent of participants passed EPA licensing tests for the Basic Core.

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

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

% of participants adopting some established IPM practices

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Appropriations changes

Brief Explanation

Indirectly, outcomes five and six were not measured due to appropriations to EPA being cut for the Pesticide Safety Education Program (PSEP). Previously, EPA subcontracted the training and testing to the University of Guam Cooperative Extension Services. While the training (education) for PSEP is still performed by Cooperative Extension as a community service, the testing is now performed and under the purview of EPA. These two outcomes (survey questions) were on Cooperative Extension tests but are not included in the current EPA tests. Next year, these survey questions will be asked during training.

V(I). Planned Program (Evaluation Studies)

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

Global Food Security and Hunger - Sustainability of Small Scale Swine and Poultry Farms on Guam

Reporting on this Program

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	20%			
307	Animal Management Systems	80%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	1.2	0.0	0.0	0.0
Actual Paid Professional	1.2	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
94413	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
71429	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
40786	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Activities conducted for this program in 2012 include the following: 1. In partnership with UOG-CES (education and outreach) and the Department of Agriculture (service support) feeding trials were

conducted on high protein forages and local feeds on goats; 2) conducted workshops and training sessions to local and regional producers at the facility; 3) delivered services and products (Department of Agriculture) and educational and technical support (Guam Cooperative Extension Service) to local and regional producers; and 4) conducted applied research and field experiments at the facility and on farmers farms. Forage demonstration plots were conducted at the university campus, Guam Department of Agriculture Station and a private farm.

2. Brief description of the target audience

Primary target audiences are local clients, including former, existing and potential new animal producers (swine, goats 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 with many of the producers possessing limited resource in desperate need of education and technical support programs to support their agricultural efforts.

Second target groups are the local and regional agricultural professionals. Regional workshops related to animal production were conducted at the demonstration farm. Extension agents and local and regional professionals from the different Land Grant Institutions from Micronesia and Northern Mariana Islands participated in activities at the site. Guam continues to be the source of swine breeders and replacement chicks for these two areas.

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

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	100	200	500	200

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

Patent Applications Submitted

Year: 2012
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of workshops

Year	Actual
2012	4

Output #2

Output Measure

- # of extension publications

Year	Actual
2012	2

Output #3

Output Measure

- # of field trips

Year	Actual
2012	2

Output #4

Output Measure

- # of applied research conducted in demonstration site

Year	Actual
2012	1

Output #5

Output Measure

- # of visitors

Year	Actual
2012	130

Output #6

Output Measure

- # of one to one contacts

Year	Actual
2012	125

Output #7

Output Measure

- # of request for animal displays

Year	Actual
2012	6

Output #8

Output Measure

- # of 4-H / Military Kids programs conducted at site

Year	Actual
2012	0

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	Actual
2012	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Goat production was included in this year's program. The market price of goats have become attractive but the supply is becoming less. One of the reasons of low production is poor nutrition. The feeding systems of grazing and tethering goats on low quality pasture results in poor growth rate and low kidding rate.

What has been done

Varieties of high protein containing forages such as pigeon pea, mulberry, Moringa sp. and Leucaena sp. were utilized in a feeding trial to demonstrate the effects of these high quality forages to goat performance. Local plant materials such as breadfruit, coconut and taro were processed to goat feed to substitute for commercial goat feed.

Results

Goats fed with these forages showed much improved health, better physical appearance (shiny haircoat) and no digestion problems such as bloat, diarrhea. Goat producers saw first-hand results and were impressed by what they saw and observed. One farmer started to propagate forages in his farm.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
307	Animal Management Systems

Outcome #2

1. Outcome Measures

of producers adopting demonstrated practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Goat producers have this notion and concept that as long as there is green vegetation in the pasture area, the goats will survive and be productive. Regardless if their body conditions show emaciation, untriftness and low production. There is no strong motivation to have their pasture area be improved by planting quality grasses or legumes.

What has been done

Survey was made on what high protein forages and legumes are already on Guam to avoid introducing new specie. These forages were propagated and grown for demonstration purposes and observe for biomass, palatability and effects on health and digestive disorders. Seedlings and cuttings were given to producers to have them try planting in their farm.

Results

One farmer actually planted pigeon pea in his farm out of the 20 farmers that were given forage materials to plant. Different reasons were given why they did not plant. In spite of the fact that some of these farmers saw the positive effects of feeding these forages to the goats.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
307	Animal Management Systems

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	Actual
2012	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Getting replacement broodstocks will always be a big problem on Guam. The most recent is getting import permits to bring in frozen bull and boar semen. It is most practical to bring the genetic materials compared to bringing in live bulls or boars. It is less risky in terms of introducing new diseases to the island and most cost effective.

What has been done

Livestock producers, animal health professionals, animal scientists and Government of Guam officials held several meetings to change the existing regulations and laws of semen imports. Changes that won't endanger the current animal health status but doable import requirements as being practiced by the cattle and swine industry in the US mainland. Orders of both bull and boar semen are ready to be shipped to Guam

Results

After the final draft of the changes were made, we are all awaiting for the amended regulation to be signed and approved by attorney general and other higher authorities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

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	Actual
2012	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Prices of imported feeds continue to increase and will go higher as shipping costs continue to rise. With the prices going up, the quality of the feeds also decreases because the sales are not that fast that re-order of new" feeds" by commercial feedstores gets delayed. Thus, it becomes a double misery for the producers.

What has been done

Studies to analyze potential feeds for livestock continued and expanded to include goats. More plant materials and local forages were analyzed for nutrient contents.

Results

Feed formulation from local ingredients is now possible with all the information gathered from analysis of nutrient contents of these plant resources. Mixing local feeds and commercial feeds showed promising results in terms of savings in feed costs without sacrificing animal performance.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

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	Actual
2012	15

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Production and management problems still are the main issues of the livestock industry on Guam. Although marketing also contributes to the slow development of the industry. Producers get along by what resources they have and information they can get. They tend to do things their own ways.

What has been done

Constant demonstration of what can be done with local resources available have been the main focus of this program, especially with feed problems. From the basic processing of drying, grinding and mixing to actual feeding trials. These are all doable and results were positive.

Results

Based on the observations made on local feed processing and production, a cooperative effort of producers or individuals may work better than individual producers processing their own feed. Similar to the industry setting that companies make feeds to sell to farmers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Government Regulations
- Competing Programmatic Challenges
- Other (Change in government leaders, farmer adoption of BMP)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Producers who came to see the demonstration sites were convinced and impressed by the results of the applied research on goat nutrition. They saw first hand the benefits and effects of feeding high protein forage to goats. Goats used before the feeding trials were emaciated and nutritionally challenged but the goats greatly improved in health and appearance after months of feeding legumes and supplements of local feeds.

Producers learned the significance of feeding good quality roughage to goats and not just rely on whatever vegetations are in the pasture / tethering area. They are aware of the locally available legumes in the region besides the *Leucaena* sp.

Key Items of Evaluation

Hands-on experiences and first hand information given and provided to producers seem to work best in terms of learning and retaining information to them.

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Global Food Security and Hunger

Reporting on this Program

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%			
104	Protect Soil from Harmful Effects of Natural Elements	15%			
125	Agroforestry	15%			
205	Plant Management Systems	15%			
307	Animal Management Systems	10%			
403	Waste Disposal, Recycling, and Reuse	20%			
601	Economics of Agricultural Production and Farm Management	10%			
608	Community Resource Planning and Development	5%			
806	Youth Development	5%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	1.0	0.0	0.0	0.0
Actual Paid Professional	1.5	0.0	0.0	0.0
Actual Volunteer	0.1	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
129027	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
71429	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
43274	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Support for home and community grown food as alternatives to store bought food through home and community gardening programs is high, thus increasing local food diversity and self-reliance needed for true island food security. In the 2012, this program engaged the support of the Micronesian Chefs Association to promote local produce through many public venues as viable import substitutes.

To increase the skills of the islands agricultural professional, home and community gardening and building farmer chef linkages to promote local produce topical train the trainer workshops were held. These workshops and curriculum further expands the local New Farmer curriculum while keeping a significant focus on Organic Agriculture and soil and water conservation within the curriculum. These curriculum efforts were prior to holding workshops and demonstrations for the New Farmer Trainings for the general public. Multi-agency participation was utilized in the generation of outreach publications on the demonstrated conservation and production practices. Two advisory meetings were held between cooperating agencies and nonprofit organizations (NGO's) to identify priorities in outreach program delivery. Additionally, these meetings also prioritized areas to jointly apply for grant funding to address these issues particularly in the areas of soil and water conservation, organic agriculture, and community gardens. Best management conservation and sustainable agricultural practices are being demonstrated on the UOG campus and on multi-agency demonstration farms, new enterprises (tropical fruits) and production methods (sheet mulching), and other organic practices are being demonstrated.

Funded grants are a planned output of this program, demonstrating capacity building through training, collaborative planning and presentation of needs. During this reporting period a 5 year planning effort on developing farmer chef linkages and promotion of local produce was capped through the completion of implementation of a multi-state WSARE Farmer Chef Research and Education Grant. This effort included 4 quarterly Farmer Chef Farm Grill Nights and seasonality celebration (display) and three 2-3 day Farmer Chef Conferences in Guam, Palau, and Pohnpei. The Conferences had 100, 20 and 30 participants respectively and the participation in grill nights varied between 75-125 participants per night. At each of the conference needs assessments and program planning sessions were conducted. This input will be incorporated into future adjustments to our plans of work.

On Guam workshops were held on government incentive programs and funding opportunities for farmers and workshops were also held on applying for Western Region Sustainable Agriculture Research and Education Program grants in particular the farmer rancher grants and the professional producer grants. Workshops on soil and water conservation regularly included segments on the NRCS EQIP program and on the Farm Service Agency loan programs.

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 conjunction with this group new village based needs assessments indicate that there are hundreds of local homeowners and community groups that want training in sustainable gardening practices so this effort is being adapted to include these groups. Also identified is a strong desire among many of our communities to start community gardens so this will be a new target group.

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. Recently the Micronesian Chefs and the Guam Community College Culinary program faculty have become strong supporters of this programs efforts.

Another audience are youth interested in entrepreneurial agricultural activities. Clients of mayors' offices interested in small scale and community agricultural activities are also targeted.

As we develop these programs and collaborations on Guam potential audience that has requested assistance are the agricultural professionals in the partner land grant programs, and their partners, throughout the American Affiliated Pacific.

3. How was eXtension used?

eXtension was primarily used to identify extension publications on organic agriculture, farm management, personal finance, direct marketing and soil and water conservation practices appropriate for the tropics that could be used in New Farmer workshops or drawn on to develop local publications.

eXtension was also used in one to one contact with walk-in clients seeking information and advice on personal financial management.

In addition to eXtension we found the publications on the ATTRA of the National Sustainable Agriculture program to be instrumental in our educational outreach efforts.

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1732	20000	63	0

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

Patent Applications Submitted

Year: 2012
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
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	Actual
2012	2

Output #2

Output Measure

- number of workshops

Year	Actual
2012	26

Output #3

Output Measure

- number of extension fact sheets/brochures/pamphlets

Year	Actual
2012	4

Output #4

Output Measure

- number of one to one intervention

Year	Actual
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2012 44

Output #5

Output Measure

- workshop curriculum developed and piloted with agricultural professionals

Year	Actual
2012	9

Output #6

Output Measure

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

Year	Actual
2012	2

Output #7

Output Measure

- Number of Distance Education Workshops conducted on curriculum materials.
Not reporting on this Output for this Annual Report

Output #8

Output Measure

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

Year	Actual
2012	63

Output #9

Output Measure

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

Year	Actual
2012	2

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	Number of organizations that leveraged/or increased their outreach efforts by participating in the New Farmer Programs.
4	# of farmers adopting recommended demonstration 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).

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	Actual
2012	42

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Over 1,000 agriculture leases are held by the Chamorro Land Trust Commission (CLTC) land lease holder. More than 60% of these leases are underutilized in terms of ag production or worse the lands are being poorly managed and subject to erosion.

What has been done

Four Farmer Chef Farm Grill nights/field days with farm tours showing best management soil and water conservation practices, networking opportunity with local chefs and wholesale buyers, and opportunity to link up with other farmers were a key outreach effort of this years programs.

Results

The participants learned soil and water conservation practices, marketing concerns of buyers, techniques of agricultural production and recommended agroforestry practices.

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 #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 Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	46

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a strong interest in our local community for trainings in organic agriculture and for a certification program to be brought to our island, also there is a strong desire among the community for programs on food preservation/value added processing. A key is to have qualified trainers in both of these topics and inspectors for organic agriculture, these topics were the focus of the past year's efforts.

What has been done

One two week long intensive workshop delivering the California Master Food Preserve curriculum was held under this program attendance for this was 14 participants. This group represented local and regional agricultural professionals (Guam DoAG, UOG CES), UOG SBDC advisors, agricultural consultants and Guam Community College Culinary faculty.

Results

Fourteen agriculture, business and culinary professionals passed the California Master Food Preserver qualifying course and are now adding their volunteer time to next years POW by conducting workshops on these topics for the community. Curriculum developed in a train-the-trainer manner are being used by UOG CES, Guam Community College Culinary program in their programs and by Guam Department of Agriculture in programs for community outreach and school gardening efforts.

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 #3

1. Outcome Measures

Number of organizations that leveraged/or increased their outreach efforts by participating in the New Farmer Programs.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	9

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Our island organizations involved in outreach to the agriculture and gardening community are understaffed and underfunded. The same can be said for organizations supporting ag. management and value added processing. This program brings many of these organizations together to host workshops and pool our expertise and limited funds. This enables each organization to reach a larger number of their targeted clients.

What has been done

One two week long intensive workshop delivering the California Master Food Preserve curriculum was held under this program attendance for this was 14 participants. This group represented local and regional agricultural professionals (Guam DoAG, UOG CES), UOG SBDC advisors, agricultural consultants and Guam Community College Culinary faculty.

Additionally a task force with members from UOG CES, USDA NRCS, USDA FSA, Guam DoAG and local consultants started developing a Master Gardener Curriculum in future reporting periods.

Results

Members of these organization are utilizing the curriculum materials jointly developed. Hundreds of Extension Clients have either attended the workshops or received the educational materials developed under this effort.

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 #4

1. Outcome Measures

of farmers adopting recommended demonstration practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	9

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Best management conservation and sustainable agricultural practices are being demonstrated on multi-agency demonstration farms, new enterprises (tropical fruits) and production methods (sheet mulching), and other organic practices are being demonstrated. Farmers are now beginning to adopt some food preservation practices taught.

What has been done

As part of Extension activities some farms were visited and on these a few practices such as mulch (including the use of shredded paper for carbon), sheet mulch, fruit tree windbreaks and food

preservation efforts were observed at 9 farm sites, gardens, and other demonstrations.

Results

We estimate that at least 10% of the farmers attending our workshops are implementing the practices covered in the workshops. In Post-Workshop evaluations participants state they intend to adopt practices but this year we did not follow up with field visits to determine if this is so.

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	Actual
2012	220

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

End of workshop and conference evaluations show most participants increased their knowledge of the workshop/conference topic.

What has been done

Conferences, Farm events, and workshops were held on sustainable agriculture topics.

Results

While over 173 participants from all the different conference/workshop series offered over the year indicated change in knowledge on the end of workshop evaluations. Of particular significance is that 14 Participants in the California Master Food Preserver trainings passed the final qualifying exam for the Master Food Preserver program. This is a very rigorous training and qualifying exam program.

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 #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	Actual
2012	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Agricultural, business, and culinary professionals utilizing these curriculum materials is evidence of not just change in attitude and knowledge but also change in behavior that serves to leverage the

programs efforts with limited cost to the program.

What has been done

Two Department of Agriculture Agriculture Development Services employees are utilizing the program materials in their organic farm demonstration and in their work with school garden programs.

Two Guam Community College Culinary program faculty are incorporating the curriculum in their culinary programs at GCC.

One chair of a soil and water conservation district, local ag consultants and UOG CES staff are using these materials in both farmer trainings and in training the UOG Green Volunteers in setting up on campus demonstrations.

Results

Many non Extension clients benefit from the Guam Cooperative Extension efforts and utilized the knowledge we are trying to disseminate. These are individuals that Extension would not normally reach.

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

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

Appropriations changes

Public Policy changes

Other (change in government administration)

New related issues needs identified by the agricultural community (Value added processing/food preservation trainings).

With a new island administration taking office during the past reporting period many of the partnerships of the past 4 years must be redeveloped. This slow program implementation particularly our efforts with the Chamorro Land Trust Commission but has opened doors in other area like collaboration with Guam Public Health in community & school gardening programs.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

UOG-CES find that in addition to the CLTC new farmers there is a whole community of home gardeners / small market farmers that want the same "New Farmer Workshops" so our efforts are being expanded. This newly identified group would like these workshops and demonstrations to be held in their villages instead of on campus. They also prefer workshops on weekday evenings and Saturday mornings. In addition, they share a strong interest in organic or other forms of pesticide free certification for Guam among farmers and gardeners.

Key Items of Evaluation

Farmer organizations complain about the lack of many grant and service programs like those of the USDA agricultural marketing service (AMS) not being extended to the insular region. Many interesting agriculture business grants do not allow the territorial institutions to apply.

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Global Food Security and Hunger - Home and Urban Landscapes

Reporting on this Program

Reason for not reporting

This program was changed in 2011, however, the Plan of Work system did not allow us to delete the program from the plan of work system. It will not be further reported in subsequent accomplishment reports.

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	1.9	0.0	0.0	0.0
Actual Paid Professional	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
Actual Volunteer	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 Matching	1890 Matching	1862 Matching	1890 Matching
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}
1862 All Other	1890 All Other	1862 All Other	1890 All Other
{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}	{NO DATA ENTERED}

V(D). Planned Program (Activity)

1. Brief description of the Activity

This program will identify the information needs of the small (1/2 acre to 20 acre) island producers and develop outreach efforts to address these educational needs through workshops and extension

publications, in order to increase the substitution of local production for the current imported produce.

The program will also develop and demonstrate best management practices in sustainable livestock production to promote a livestock industry that increasingly relies on local inputs and reduces imports.

This plan of work will develop home and community grown food as alternatives to store bought food through home and community gardening programs, thus increasing local food diversity and self reliance.

This plan of work will partner with other local agencies and organizations when ever possible in order to leverage the outreach efforts of this agencies.

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.

3. How was eXtension used?

{No Data Entered}

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

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

Patent Applications Submitted

Year: 2012

Actual: {No Data Entered}

Patents listed

{No Data Entered}

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	1	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of workshops held.

Year	Actual
2012	0

Output #2

Output Measure

- Number of Extension fact sheets/brochures/pamphlets.

Year	Actual
2012	0

Output #3

Output Measure

- Number of One to One contacts/interventions.

Year	Actual
2012	0

Output #4

Output Measure

- Number of multi-agency agriculture And/Or best management practiced demonstrations conducted.

Year	Actual
2012	0

Output #5

Output Measure

- Number of media stories/articles in newsletters, magazines, newspapers or on TV.

Year	Actual
2012	0

Output #6

Output Measure

- Number of collaborations: memorandums of understanding, cooperative agreements, joint demonstrations, and planned programs/grants with partner agencies and organizations.

Year	Actual
2012	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of producers/participants noting increase in knowledge and husbandry skills on recommended best management practices.
2	Number of producers/participants adopting recommended/demonstrated practices.
3	Number of producers/participants that decreased imported inputs by using local substitutes.
4	Number of local and off island agency and organization personnel adopting and/or utilizing curriculum materials developed under this plan of work.
5	Number of agencies/organizations that leveraged/or increased their outreach efforts by participating in this plan of work.

Outcome #1

1. Outcome Measures

Number of producers/participants noting increase in knowledge and husbandry skills on recommended best management practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
{No Data}	null

Outcome #2

1. Outcome Measures

Number of producers/participants adopting recommended/demonstrated practices.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
{No Data Entered}

What has been done
{No Data Entered}

Results
{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
{No Data}	null

Outcome #3

1. Outcome Measures

Number of producers/participants that decreased imported inputs by using local substitutes.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
------	--------

2012 0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
{No Data Entered}

What has been done
{No Data Entered}

Results
{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
{No Data}	null

Outcome #4

1. Outcome Measures

Number of local and off island agency and organization personnel adopting and/or utilizing curriculum materials developed under this plan of work.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
{No Data Entered}

What has been done
{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
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{No Data}	null
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Outcome #5

1. Outcome Measures

Number of agencies/organizations that leveraged/or increased their outreach efforts by participating in this plan of work.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
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{No Data}	null
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V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Other (local government changes)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Climate Change

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
132	Weather and Climate	100%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Actual Paid Professional	0.0	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

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

Not Applicable

2. Brief description of the target audience

Not Applicable

3. How was eXtension used?

Not applicable

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

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

Patent Applications Submitted

Year: 2012

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Not reporting on this program.
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	None

Outcome #1

1. Outcome Measures

None

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (Not applicable)

Brief Explanation

Not applicable

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Not applicable

Key Items of Evaluation

Not reporting

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Sustainable Energy

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	100%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Actual Paid Professional	0.0	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

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

Not reporting on this program

2. Brief description of the target audience

Not reporting on this program

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

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

Patent Applications Submitted

Year: 2012
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Not reporting on this planned programs
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	Not reporting on this program

Outcome #1

1. Outcome Measures

Not reporting on this program

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (None)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Not reporting on this program.

Key Items of Evaluation